

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

**ORDER NO. R-2-2003-0052
NPDES PERMIT NO. CA0006246**

**REISSUING WASTE DISCHARGE REQUIREMENTS FOR:
GENERAL ELECTRIC COMPANY
VALLECITOS NUCLEAR CENTER
PLEASANTON, ALAMEDA COUNTY**

FINDINGS

The California Regional Water Quality Control Board, San Francisco Bay Region, hereinafter called the Board, finds that:

1. *Discharger and Permit Application.* General Electric Company, Vallecitos Nuclear Center (hereinafter called GEVNC or the Discharger), applied to the Board for reissuance of waste discharge requirements to discharge industrial effluent (once through cooling water) to land or waters of the State and the United States and to discharge sanitary wastewater to land under the National Pollutant Discharge Elimination System (NPDES).

Facility Description

2. The Discharger is located in Vallecitos Valley about five miles southeast from the City of Pleasanton. The primary functions of the Discharger are nuclear fuel and materials research and production of radio-isotopes for medical and other uses. Facilities onsite include: a small nuclear test reactor known as Nuclear Test Reactor; laboratories for studies in radiochemistry, metallurgy, and nuclear fuels; machine shops; and administrative facilities. The Discharger also has (a) a test reactor known as GETR that it shut down on October 27, 1977, and (b) two other nuclear reactors that it shut down in the mid 1960s. At this time, the Discharger has no plans for reactivating these two reactors or the GETR.
3. The U.S.EPA and the Board have classified this Discharger as a minor discharger.

Purpose of Order

4. The Discharger generates both sanitary and industrial wastewater, which it collects, treats, and discharges separately. This NPDES permit regulates the discharges of effluent from both systems. The sanitary wastewater discharges are to land. Industrial effluent and storm water associated with industrial activity from the facility are discharged to Vallecitos Creek, a water of the United States. These discharges are currently governed by Waste Discharge Requirements specified in Order No. 97-024, adopted by the Board on February 19, 1997. By letter dated February 22, 2002, the Board continued the conditions of Order No. 97-024 past the expiration date, in accordance with NPDES regulations. In March and April 2003, the Discharger amended its ROWD to request that the Board consider allowing it to also discharge industrial effluent to land.

Discharge Description

5. The Discharger's source water originates from the Hetch Hetchy Reservoir. As a drinking water source, Hetch Hetchy water is of high quality; however, the Discharger's source water monitoring program shows that it contains copper at concentrations that can be toxic to aquatic life.
6. The discharges regulated by this permit are described below and are based on information contained in the Report of Waste Discharge and recent self-monitoring reports. Attachment A of this Order shows the location of the facility and Attachment B shows the flow diagram of the Wastewater Treatment Facilities.
 - a. **Waste 001** consists of sanitary wastewater that averages about 2,900 gallons per day (gal/day). To treat sanitary wastewater, the Discharger has it routed to an Imhoff tank, filtered through sand beds, disinfected, and held in a 60,000-gallon retention basin where the Discharger recirculates sanitary effluent to ensure that it remains adequately oxidized. The Discharger tests sanitary effluent for compliance with discharge limitations before disposing of it via sprinkler irrigation to about one acre of land. To dispose of sludge and septage, the Discharger has a contractor haul it to an offsite treatment plant.

The table below presents the quality of the discharge of **Waste 001**, as indicated in self-monitoring reports from April 2002 through September 2002.

Parameter	Minimum	Maximum
Total coliform, MPN	<2	80
pH, standard units	6.3	6.9

- b. **Waste 002** consists primarily of once-through non-contact cooling water from the Nuclear Test Reactor, the waste evaporator, machine shop, and laboratory equipment. It also includes storm water that infiltrates into the collection system. The Discharger voluntarily ceased discharge of industrial wastewaters containing site generated radioactive substances to surface waters in May 1980. The Discharger also voluntarily ceased discharge of all industrial or process related wastewater, with the exception of once-through cooling water described above, as of March 1990.

Industrial wastewater is stored in either one of three 60,000-gallon retention basins, pH adjusted as necessary, tested for compliance with permit limits and the Nuclear Regulatory Commission's (NRC) radioactivity discharge limits before it is discharged by gravity to an unnamed earthen drainage ditch tributary to Vallecitos Creek (lat. 37°31'00", long. 121°48'30"). Vallecitos Creek is tributary to Arroyo de la Laguna, which is tributary to Alameda Creek approximately 2 miles downstream. The discharge is intermittent. From January 1999 through March 2002, the average and maximum discharges were 19,600 gal/day and 50,000 gal/day, respectively.

This permit also allows Waste 002 to be discharged to an onsite lake shown in Attachment A. The Discharger maintains this lake for aesthetic enjoyment. It is a spring-fed lake formerly used as a stock-watering pond when the property was farmland. In the past, the Discharger placed some fish in the lake. Waste 002 was previously used to replenish the lake to keep the fish alive. The Department of Fish and Game has determined that this practice is acceptable. In the past, an average of 5,950 gal/day has been used for this purpose, but Waste 002 has not been directed to the pond over the last 3 years.

Additionally, the permit contains specific conditions for the Discharger to dispose of Waste 002 to three separate areas (shown in Attachment A) where natural grasses grow (two are about one-

acre while the third is about six acres). The Discharger indicates that it will use this area as its preferred option for disposing of industrial wastewater. The Discharger plans to use the one-acre area shown in Attachment B as its primary disposal area. If the Discharger determines that it needs additional land (e.g., permeability rates turn out to be lower than those estimated in the ROWD), it may decide to use the other areas mentioned above.

The table below presents the quality of the discharge of **Waste 002**, as indicated in self-monitoring reports from January 1999 through September 2002.

Parameter	Average ¹	Range of Reported Values
Temperature °F		46 – 85
pH, standard units	--	6.2 – 8.6
TSS, mg/L	1.4	<1 – 3
TDS, mg/L	61	4 – 430
Chloride, mg/L	6.3	2.3 – 20
Oil and Grease, mg/L	²	<1 – 5.3 ⁴
Dissolved oxygen, mg/L	9.2	7.2 – 11.8
Chromium, total, µg/L	2.4	<1 – 5.35
Copper, µg/L	11	<2 – 93
Lead, µg/L	1.2	<0.5 – 1.8
Mercury, µg/L	³	<0.002 – <0.2
Zinc, µg/L	19	<1 – 80
Toxicity, acute, % survival	--	75 – 100

¹ For nondetect values, Board staff used ½ the detection limit to calculate average concentrations

² There was only one detected value for oil and grease.

³ All reported values were below the detection limits.

⁴ The sample analyzed in September 2000 was collected improperly and resulted in a concentration of 120 mg/L. The effluent was re-sampled and the analysis indicated a concentration below detectable levels.

- c. **Waste 003** consists of storm water runoff from about 140 acres of property associated with industrial activities. The property is primarily unpaved with approximately 12 acres of paved surface. The developed areas contributing runoff include parking lots, roadways, building roofs and general yard areas where unused equipment and waste materials may be stored. Waste materials in these yards are contained in sealed transportation containers, which prevent contamination of storm water runoff. Waste 003 may also include minor amounts of air conditioner condensate. Waste 003 drains the site via two main ditches that join and discharge to an unnamed ditch that is tributary to Vallecitos Creek at generally the same location as Waste 002 (lat. 37°31'00", long. 121°48'30"). Self-monitoring data for Waste 003 consisted of two data points, collected on February 11, 2000 and November 12, 2001.

Parameter	Range
Electrical conductivity, µmhos/cm	84 – 270
pH, standard units	6.7 – 7.7
Oil and grease, mg/L	<5
Settleable solids, ml/l-hr	<0.1
Gross alpha, pCi/L	4.41 – 8.43
Gross beta, pCi/L	0.79 – 6.38

Applicable Plans, Policies and Regulations

Basin Plan

7. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board (SWRCB) and the Office of Administrative Law on July 20, 1995 and November 13, 1995, respectively. A summary of the regulatory changes is contained in Title 23 of the California Code of Regulations, Section 3912. The Basin Plan identifies beneficial uses and water quality objectives (WQOs) for waters of the state in the Region, including surface waters and groundwaters. The Basin Plan also identifies discharge prohibitions intended to protect beneficial uses. This Order implements the Board's Basin Plan.

Beneficial Uses

8. Vallecitos Creek is tributary to Arroyo de la Laguna, which is tributary to Alameda Creek. Beneficial uses for Arroyo de la Laguna, Alameda Creek, Vallecitos Creek, and contiguous waters as identified in the Basin Plan and based on known uses of the receiving water in the vicinity of the discharge, are:
 - a. Agricultural Supply
 - b. Cold Freshwater Habitat
 - c. Warm Freshwater Habitat
 - d. Groundwater Recharge
 - e. Water Contact Recreation
 - f. Non-Contact Water Recreation
 - g. Fish Spawning
 - h. Fish Migration
 - i. Wildlife Habitat

Discharge Prohibition Exception

9. The Basin Plan prohibits the discharge of any wastewater which has particular constituents of concern to beneficial uses at any point at which the wastewater does not receive a minimum initial dilution of at least 10:1, or into any nontidal water, dead-end slough, similar confined waters, or any immediate tributaries thereof. The Basin Plan also prohibits wastewater discharges to Alameda Creek above Niles where no natural flow occurs if the wastewater contains particular characteristics of concern to beneficial uses. The threat of a buildup of dissolved solids, stable organics, and other pollutants in the groundwater of the Niles Cone Area, recharged with waters of Alameda Creek, is most critical in the dry weather period when wastewater could account for much of the water percolating to the basin. As found in issuing the previous Order, this prohibition does not apply to this discharge since it does not contain constituents of concern that could affect beneficial uses provided the Discharger meets effluent limits prescribed in this Order. Recent self-monitoring data supports the Discharger's ability to meet effluent limitations for dissolved solids (in particular TDS and chloride). Additionally, the reasonable potential analysis for priority pollutants indicates that only copper and zinc have the potential to exceed water quality objectives. Since this permit gives the Discharger the option to discharge industrial wastewater to land that does not meet surface water limits for copper and zinc, compliance with these pollutants should not be problematic. As in the previous Order, the exception to the Basin Plan prohibition is conditioned upon the Discharger updating and continuing to implement Best Management Practices Plan and a Storm Water Pollution Prevention Plan. This is necessary to prevent the release of pollutants to State waters from ancillary activities (i.e., material storage areas, plant site runoff, in-plant transfer, process and material handling areas, loading and unloading operations, and waste treatment/containment areas).

Beneficial Uses of Groundwater

10. The Basin Plan identifies existing and potential beneficial uses of groundwater in the Alameda Creek (Niles Cone) basin as municipal, domestic, industrial process, industrial service, and agricultural supply.
11. To protect beneficial uses of groundwater for the Alameda Creek watershed above Niles (central basin), the Basin Plan indicates that the concentration of total dissolved solids (TDS) must not exceed ambient or 500 mg/L, whichever is lower, and that nitrate (as NO_3) must not exceed 45 mg/L. To address nitrate, this Order requires the Discharger to develop a Nutrient Management Plan. For TDS, recent monitoring data indicate that discharges of treated sanitary wastewater contain values well above 500 mg/L. To investigate sources of TDS, the Discharger performed conductivity monitoring after sand filter beds, after chlorination, and before discharges to land. These results suggest that source control is not an issue, as conductivity values are low (about 340 $\mu\text{mhos/cm}$) before disinfection. It appears that disinfection and evaporation are the cause of high TDS values in treated sanitary wastewater. This is because the Discharger uses sodium hypochlorite to disinfect and stores sanitary wastewater in a basin for up to one month before discharge. Even though monitoring data suggests excessive use of sodium hypochlorite, increases in TDS from disinfection and evaporation would likely result in TDS values above 500 mg/L. As both industrial and sanitary discharges to land will affect TDS values in groundwater, this Order allows for use of an average limit for these combined discharges provided the Discharger ensures that sanitary discharges are not contributing unreasonable levels of TDS (i.e., the Discharger ensures optimal chlorination). To ensure this, this Order requires a Disinfection Study to document how the Discharger will optimize its disinfection system.
12. The Alameda County Flood Control and Water Conservation District provided TDS data for several wells near the proposed industrial effluent and existing treated sanitary wastewater disposal areas. Board staff performed a statistical analysis and removed one value (TDS of 1769 mg/L) out of 23 samples, as it most likely did not represent ambient background and skewed the data set. The remaining data points fit a normal distribution, and resulted in median and mean TDS concentrations of 520 and 530 mg/L, respectively.
13. The form of nitrogen in the sanitary wastewater discharge will most likely be either ammonia or nitrate. Ammonia present in the sanitary wastewater discharged to land could be taken up by plants, immobilized by microbes, and/or oxidized to nitrate. Plants may also uptake nitrate, but this form of nitrogen is very soluble in water and could quickly leach into underlying groundwater. As the amount of treated sanitary wastewater to land is small in volume, and the Discharger spreads it over about one-acre of grasses and weeds, most of the nitrogen should be removed by plants. Accordingly, adherence to a strict effluent limit for nitrogen forms to protect groundwater is not necessary. To protect groundwater, this permit requires that nitrogen applications not exceed agronomic rates. For industrial effluent discharges to land, it is not reasonable for nitrate to be present in this discharge (i.e., once through cooling water) at levels of concern

Nuisance Conditions

14. To demonstrate that it will not cause nuisance conditions, as defined in section 13050(m)(1) of the California Water Code, the Discharger provided a water balance that shows sanitary wastewater and industrial effluent will percolate in a timely manner. This is necessary to ensure that the Discharger does not create conditions favorable to mosquito habitat. To minimize such conditions, this permit limits the time for standing water in the disposal area and requires corrective measures to prevent emergent vegetation in areas where water tends to pond. Additionally, this permit requires that the Discharger ensure that treated sanitary wastewater is adequately oxidized before it discharges to land.

State Implementation Policy (SIP)

15. The SWRCB adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (also known as the State Implementation Policy or SIP) on March 2, 2000 and the Office of Administrative Law (OAL) approved the SIP on April 28, 2000. The SIP applies to discharges of toxic pollutants in the inland surface waters, enclosed bays and estuaries of California subject to regulation under the State's Porter-Cologne Water Quality Control Act (Division 7 of the Water Code) and the federal Clean Water Act. The SIP establishes implementation provisions for priority pollutant criteria promulgated by the U.S.EPA through the National Toxics Rule (NTR) and California Toxics Rule (CTR), and for priority pollutant objectives established by the Regional Water Quality Control Boards (RWQCBs) in their water quality control plans (basin plans). The SIP also establishes monitoring requirements for 2,3,7,8-TCDD equivalents, chronic toxicity control provisions, and Pollutant Minimization Programs.

California Toxics Rule (CTR)

16. On May 18, 2000, the U.S.EPA published the *Water Quality Standards: Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California* (Federal Register, Volume 65, Number 97, 18 May 2000). These standards are generally referred to as the CTR. The CTR specified water quality criteria (WQC) for numerous pollutants, of which some are applicable to the Discharger's effluent discharges.

Other Regulatory Bases

17. WQOs/WQC and effluent limitations in this permit are based on the SIP; the plans, policies and WQOs and criteria of the Basin Plan; CTR (Federal Register Volume 65, 97); *Quality Criteria for Water* (U.S.EPA 440/5-86-001, 1986 and subsequent amendments, "U.S.EPA Gold Book"); applicable Federal Regulations (40 CFR Parts 122 and 131); NTR (57 FR 60848, 22 December 1992 and 40 CFR Part 131.36(b)); NTR Amendment (Federal Register Volume 60, Number 86, 4 May 1995, pages 22229-22237); U.S.EPA December 10, 1998 "National Recommended Water Quality Criteria" compilation (Federal Register Vol. 63, No. 237, pp. 68354-68364); and Best Professional Judgment (BPJ) as defined in the Basin Plan. Where numeric effluent limitations have not been established or updated in the Basin Plan, 40 CFR 122.44(d) specifies that water quality-based effluent limitations (WQBELs) may be set based on U.S.EPA criteria and supplemented where necessary by other relevant information to attain and maintain narrative WQC to fully protect designated beneficial uses. Discussion of the specific bases and rationale for effluent limits are given in the associated Fact Sheet for this Permit, which is incorporated as part of this Order.
18. In addition to the documents listed above, other U.S.EPA guidance documents upon which BPJ was developed may include in part:
- Region 9 Guidance For NPDES Permit Issuance, February 1994;
 - U.S.EPA Technical Support Document for Water Quality-Based Toxics Control (March 1991) (TSD);
 - Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria, October 1, 1993;
 - Whole Effluent Toxicity (WET) Control Policy, July 1994;
 - National Policy Regarding Whole Effluent Toxicity Enforcement, August 14, 1995;
 - Clarifications Regarding Flexibility in 40 CFR Part 136 Whole Effluent Toxicity (WET) Test Methods, April 10, 1996;
 - Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Programs Final, May 31, 1996;
 - Draft Whole Effluent Toxicity (WET) Implementation Strategy, February 19, 1997.

Basis for Effluent Limitations

General Basis

19. *Federal Water Pollution Control Act.* Effluent limitations and toxic effluent standards are established pursuant to sections 301 through 305, and 307 of the Federal Water Pollution Control Act and amendments thereto are applicable to the discharges herein.

Technology-Based Effluent Limits

20. There are currently no national technology-based effluent limitation guidelines for this point source discharge. Effluent limitations for settleable solids, total suspended solids, and oil and grease are based on the effluent limitations in Order No. 97-024. These limitations are based on the Basin Plan, other State plans and policies, current plant performance, and BPJ.

Water Quality-Based Limits for Non-Priority Pollutants

21. Water quality-based limits for surface water discharges of industrial wastewater for pH, total dissolved solids, and chlorides are the same as the effluent limits in Order 97-024 and are based on the Basin Plan and BPJ. For temperature, this Order reduces the limit to 85°F, which was the maximum value observed from January 1999 through September 2002. Additionally, this permit includes alternative limits for Waste 002 discharges to land, which are based on the Basin Plan and BPJ.

Applicable Water Quality Objectives/Criteria

22. The WQOs and WQC applicable to the receiving waters for this discharge are from the Basin Plan, the CTR, and the NTR.
- a. The Basin Plan specifies numeric WQOs for 10 priority toxic pollutants, as well as narrative WQOs for toxicity and bioaccumulation in order to protect beneficial uses. The pollutants for which the Basin Plan specifies numeric objectives are arsenic, cadmium, chromium (VI), copper in freshwater, lead, mercury, nickel, silver, zinc, and cyanide (see also c. below). The narrative toxicity objective states in part "[a]ll waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms." The bioaccumulation objective states in part, "[c]ontrollable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life." Effluent limitations and provisions contained in this Order are designed to implement these objectives, based on current available information.
 - b. The CTR specifies numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants. These criteria apply to inland surface waters and enclosed bays and estuaries such as here, except that where the Basin Plan's Tables 3-3 and 3-4 specify numeric objectives for certain priority toxic pollutants. The Basin Plan's numeric objectives apply over the CTR (except in the South Bay south of the Dumbarton Bridge).
 - c. The NTR established numeric aquatic life criteria for selenium, numeric aquatic life and human health criteria for cyanide, and numeric human health criteria for 34 toxic organic pollutants for waters of San Francisco Bay upstream to and including Suisun Bay and the Sacramento-San Joaquin Delta.

Basin Plan Receiving Water Salinity Policy

23. The Basin Plan states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable WQOs. Freshwater objectives apply to

discharges to waters both outside the zone of tidal influence and with salinities lower than 5 parts per thousand (ppt) at least 75 percent of the time. Saltwater objectives shall apply to discharges to waters with salinities greater than 5 ppt at least 75 percent of the time. For discharges to waters with salinities in between the two categories or tidally influenced freshwaters that support estuarine beneficial uses, the objectives shall be the lower of the salt or freshwater objectives, based on ambient hardness, for each substance. For constituents with WQOs specified in the Basin Plan, it is appropriate to use the Basin Plan definition for determining if the receiving water is fresh, marine, or estuarine.

CTR Receiving Water Salinity Policy

24. The CTR states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable WQC. Freshwater criteria shall apply to discharges to waters with salinities equal to or less than one ppt at least 95 percent of the time. Saltwater criteria shall apply to discharges to waters with salinities equal to or greater than 10 parts per thousand (ppt) at least 95 percent of the time in a normal water year. For discharges to water with salinities in between these two categories, or tidally influenced freshwaters that support estuarine beneficial uses, the criteria shall be the lower of the salt or freshwater criteria, (the latter calculated based on ambient hardness), for each substance. In applying CTR criteria it is appropriate to use the CTR definition for determining if the receiving water is fresh, marine, or estuarine.

Receiving Water Salinity and Hardness

25. a. Salinity. The receiving water for the subject discharge is Vallecitos Creek. Based on the nature of inflows, Vallecitos Creek is fresh water in character. Previous permit limits were based on fresh water objectives. Therefore, the reasonable potential analysis and this Order's effluent limitations are based on freshwater WQOs/WQC.
- b. Hardness. Some WQOs and WQC are hardness dependent. Hardness data were evaluated for development of existing limitations. Data from groundwater samples of nearby wells ranged from 100 mg/L to 1,000 mg/L as calcium carbonate. Analysis of hardness data for Alameda Creek indicate values greater than 100 mg/L. Existing limitations were based conservatively on 100 mg/L, which is at the lower end of the range of hardness values reported for this water body. In determining the WQOs and WQC for this Order, the Board used a hardness of 100 mg/L, which is the minimum hardness value observed for the receiving water.

Water Quality-Based Effluent Limitations

26. Toxic substances are regulated by WQBELs derived from water quality objectives listed in the Basin Plan Tables 3-3 and 3-4, the NTR, U.S.EPA recommended criteria, the CTR, the SIP, and/or BPJ. Numeric WQBELs are required for all constituents that have reasonable potential to cause or contribute to an excursion above any State WQO/WQC. Reasonable potential is determined and final WQBELs are developed using the methodology outlined in the SIP. If the Discharger demonstrates that the final limits will be infeasible to meet and provides justification for a compliance schedule, then interim limits are established, with a compliance schedule to achieve the final limits. Further details about the effluent limitations are given in the associated Fact Sheet.

Receiving Water Ambient Background Data used in Calculating WQBELs

27. There are insufficient ambient background data available for Vallecitos Creek. By letter dated August 6, 2001, the Board's Executive Officer required the Discharger conduct additional monitoring pursuant to section 13267 of the California Water Code.

Dilution and Assimilative Capacity

28. As mentioned in Finding No. 6, the discharge is to a drainage ditch that is tributary to Vallecitos Creek, which eventually flows to Arroyo de la Laguna and then Alameda Creek. In the dry season, these waterways typically have little or no flow. The actual dilution received by the discharge in the drainage ditch or Vallecitos Creek have not been modeled or measured. Accordingly, the Board classified the discharge as a shallow water discharge. As such, effluent limitations are calculated based on no dilution ($D=0$).

Total Maximum Daily Loads (TMDLs) and Waste Load Allocations

29. *Constituents Identified in the 303(d) List.* On May 12, 1999, the U.S. EPA approved a revised list of impaired waterbodies prepared by the State. The list (hereinafter referred to as the 303(d) list) was prepared in accordance with Section 303(d) of the federal Clean Water Act to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources. Vallecitos Creek is not listed as an impaired water body, although Alameda Creek and Arroyo de la Laguna are both listed as impaired waterbodies. Further, Alameda Creek eventually reaches the lower San Francisco Bay, and the lower San Francisco Bay is listed as an impaired water body. The pollutants impairing lower San Francisco Bay include copper, mercury, nickel, PCBs total, dioxin and furan compounds, chlordane, DDT, dieldrin, diazinon, dioxin-like PCBs, and exotic species. Alameda Creek and Arroyo de la Laguna are impaired by diazinon.
30. Based on the 303(d) list of pollutants impairing Alameda Creek, Arroyo de la Laguna, and the lower San Francisco Bay, the Board plans to adopt TMDLs for these pollutants no later than 2010, with the exception of dioxin and furan compounds. The Board defers development of the TMDL for dioxin and furan compounds to the U.S. EPA. The Board plans to adopt TMDLs for Alameda Creek no later than 2004. Future review of the 303(d) list for Alameda Creek, Arroyo de la Laguna, and the lower San Francisco Bay may result in revision of the schedules and/or provide schedules for other pollutants.
31. The TMDLs will establish waste load allocations (WLAs) and load allocations for point sources and non-point sources, respectively, and will result in achieving the water quality standards for the waterbody. The final effluent limitations for this Discharger may be adjusted in response to WLAs that are derived from the TMDLs.

Specific Basis

Reasonable Potential Analysis

32. As specified in 40 CFR 122.44(d) (1) (i), permits are required to include WQBELs for all pollutants "which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard." Using the method prescribed in Section 1.3 of the SIP, Board staff analyzed effluent data to determine if the discharge has a reasonable potential to cause or contribute to an excursion above a State water quality standard ("Reasonable Potential Analysis" or "RPA"). For all parameters that have reasonable potential, numeric WQBELs are required. The RPA compares the effluent data with numeric and narrative WQOs in the Basin Plan and numeric WQC from the U.S.EPA Gold Book, the NTR, and the CTR.
33. *RPA Methodology.* The method for determining RPA involves identifying the observed maximum pollutant concentration in the effluent (MEC) for each constituent, based on effluent concentration data. The RPA for all constituents is based on zero dilution, according to section 1.3 of the SIP. There are three triggers in determining reasonable potential.

- a. The first trigger is activated when the MEC is greater than or equal to the lowest applicable WQO/WQC, which has been adjusted for pH, hardness (assumed in this permit analysis at 100 mg/L), and translator data, if appropriate. An MEC that is greater than or equal to the (adjusted) WQO/WQC means that there is reasonable potential for that constituent to cause or contribute to an excursion above the WQO/WQC and a WQBEL is required. (Is the $MEC \geq WQO/WQC$?)
 - b. The second trigger is activated if the observed maximum ambient background concentration (B) is greater than the adjusted WQO/WQC and the MEC is less than the adjusted WQO/WQC. If B is greater than the adjusted WQO/WQC, then a WQBEL is required. (Is $B > WQO/WQC$?). As indicated in a previous finding, there are insufficient background data currently available for Vallecitos Creek to complete this step in the RPA. When such data are collected as required by the August 6, 2001 letter, Board staff will evaluate the need for WQBELs, as appropriate.
 - c. The third trigger is activated after a review of other information determines that a WQBEL is required even though both MEC and B are less than the WQO/WQC. A limit is only required under certain circumstances to protect beneficial uses.
34. *Summary of RPA Data and Results.* The RPA was based on self-monitoring data for Waste 002 for certain metals (chromium, copper, lead, mercury, and zinc) for the period from January 1999 through September 2002. Based on the RPA methodology described above and in the SIP, copper and zinc have been found to have reasonable potential to cause or contribute to an excursion above WQOs/WQC. Based on the RPA, numeric WQBELs are required to be included in the permit for these constituents.
35. The Board recognizes that as a result of the August 6, 2001 letter, additional effluent and background water quality data will be submitted coinciding with the adoption of this Order. Upon evaluation of the additional data, this Order contains a provision that allows the permit to be re-opened to establish limits if new data show there is reasonable potential.
36. *RPA Determinations.* The MEC, WQOs/WQC, bases for the WQOs/WQC, background concentrations used and reasonable potential conclusions from the RPA are listed in the following table for all constituents analyzed. The RPA results for some of the constituents in the CTR were not able to be determined because of the lack of background data, an objective, or effluent data. (Further details on the RPA can be found in the Fact Sheet.)

Constituent	WQO/ WQC ($\mu\text{g/L}$)	Basis ¹	MEC Waste 002 ($\mu\text{g/L}$)	Maximum Ambient Background Conc. ($\mu\text{g/L}$)	Reasonable Potential
Cadmium	1.13	BP, fw, H=100	<5	NA	No
Chromium(VI)	11	BP, fw	5.35	NA	No
Copper	11.82	BP, fw, H=100	93	NA	Yes
Lead	3.18	BP, fw, H=100	1.8	NA	No
Mercury	0.025	BP, fw	<0.002	NA	No
Zinc	58	BP, fw	80	NA	Yes
CTR #s 1, 2, 3, 5a, 9-12, and 14-126	Various or NA	CTR	Non-detect, less than WQC, no WQC or NA	Less than WQC or NA	No or Unknown

¹ RPA based on the following: Hardness (H), 100 in mg/L as CaCO_3 ; BP = Basin Plan; CTR = California Toxics Rule; NTR=National Toxics Rule; fw = freshwater.

37. *RPA Results for Impairing Pollutants.* While TMDLs and WLAs are being developed, effluent concentration limits are established in this permit for 303(d)-listed pollutants that have reasonable potential to cause or contribute to an excursion above the water quality standard. Copper is the only constituent on the 303(d) list (for the lower San Francisco Bay) for which the RPA determined a need for effluent limitations.

Specific Pollutants

38. *Chromium, Lead, and Mercury.* The previous Order contained effluent limits for chromium, lead, and mercury. As indicated in an earlier finding, these constituents do not have reasonable potential to cause an exceedance of their respective WQOs. Accordingly, this Order does not include effluent limitations for these constituents. This does not represent backsliding because elimination of limits for these pollutants are based on the procedures for applying WQOs/WQC adopted in the SIP since previous permit issuance.
39. *Organic Pollutants.* The RPA could not be performed for various organic constituents (e.g., PCBs, semi-volatile organic compounds) because the Discharger has not been required to sample organic constituents by the previous permits. In the absence of any data for these compounds, the Discharger will monitor PCBs, volatile semi-volatile organic constituents, and pesticides according to the requirements in the August 6, 2001 letter. Upon completion of the monitoring, the Board shall use the gathered data to complete the RPA for organic constituents (as listed in the CTR) and determine if WQBELs are required.
40. *Permit Reopener.* This Order includes a reopener provision to allow numeric effluent limitations to be added or deleted for any constituent that exhibits or does not exhibit, respectively, reasonable potential. The Board will make this determination based on monitoring results.

Development of Effluent Limitations

Copper

41. *Copper Water Quality Objectives.* To protect fresh water aquatic life at a hardness of 100 mg/L, the Basin Plan specifies objectives for copper of 11.82 µg/L as a 4-day average and 17.73 µg/L as a 1-hour average.
42. *Copper Effluent Limitations.* Based on the RPA, there is reasonable potential for exceedances of the WQC for copper in the subject discharge. The final WQBELs for copper may be based on the WLA contained in a TMDL. If the 303(d) listing process concludes that the lower San Francisco Bay is not impaired by copper, then a de-listing of the Bay for copper will result. The calculated WQBELs in this Order (AMEL of 6.1 µg/L and MDEL of 18 µg/L) are feasible for the Discharger to meet since it has the ability to discharge industrial effluent to land.
43. *Copper Compliance Evaluation Study.* The previous Order contained a daily maximum effluent limitation of 11.8 µg/L for copper. Permit violations from 2000 to 2002 for copper triggered the Board to issue the Discharger a mandatory minimum penalty. As GEVNC discharges industrial wastewater in batches, it began to collect and analyze industrial wastewater samples before discharging to surface waters. To ensure it did not further violate copper effluent limitations, the Discharger proposed discharging industrial wastewater to land. As copper limits are aquatic life driven, the Board conditionally approved GEVNC to discharge some batches of industrial wastewater to land. As mentioned in an earlier finding, the Discharger proposes that the Board allow for land discharges to designated areas in this permit. To determine if land discharges are necessary to protect aquatic life, this permit requires the Discharger to collect and evaluate each "batch" of industrial wastewater for copper before it discharges through Outfall 002-SW.

Zinc

44. *Zinc Water Quality Objectives.* To protect fresh water aquatic life, the Basin Plan specifies objectives for zinc of 58 µg/L as a 24-hour average and 170 µg/L as an instantaneous maximum.
45. *Zinc Effluent Limitations.* Based on the RPA, there is reasonable potential for exceedances of the WQC for zinc in the subject discharge. The calculated WQBELs in this Order (AMEL of 44 µg/L and MDEL of 100 µg/L) for zinc are feasible for the Discharger to meet since it has the ability to discharge to land. To determine if land discharges are necessary to protect aquatic life, this permit also requires the Discharger to collect and evaluate each "batch" of industrial wastewater for zinc before it discharges through Outfall 002-SW.

Land Discharges

46. *Industrial Effluent.* As indicated above, GEVNC proposes to discharge industrial effluent to land that does not meet aquatic life protective limits for copper and/or zinc. To determine if limits for copper and zinc are necessary for land discharges of Waste 002, Board staff compared objectives for protecting agricultural and municipal uses with the maximum observed effluent concentration. These values are shown in the table below in µg/L:

<u>Constituent</u>	<u>Maximum Effluent</u> ¹	<u>Agricultural Threshold</u> ²	<u>Municipal Secondary MCL</u> ³
Copper	93	200	1,000
Zinc	80	2,000	5,000

¹ This includes self-monitoring data from January 1999 through September 2002. During this time, the Discharger collected 45 samples for copper and 44 samples for zinc.

² Ayers and Westcot, *Water Quality for Agriculture*, Food and Agriculture Organization of the United Nations – Irrigation and Drainage Paper No. 29, Rev. 1, Rome (1985). These values are applicable for waters used continuously on all soils. The Basin lists these values as agricultural thresholds.

³ Title 22, California Code of Regulations, section 64449, Table 64449-A.

As numerical objectives for copper and zinc to protect agricultural and municipal supplies are well above the concentrations recently observed in industrial effluent, there is no reasonable potential for these constituents to adversely affect beneficial uses if discharged to land. Accordingly, this permit does not include limitations for copper and zinc if GEVNC discharges to land.

47. *Sanitary Wastewater.* This permit also carries over prohibitions and effluent limitations for pH and total coliform for Waste 001 from the previous permit.

Whole Effluent Acute Toxicity

48. This Order includes effluent limits for whole effluent acute toxicity. Compliance evaluation is based on 96-hour static bioassays. U.S.EPA promulgated updated test methods for acute and chronic toxicity bioassays in October 2002 in 40 CFR Part 136. Dischargers have identified several practical and technical issues that need to be resolved before implementing the new procedures, referred to as the 5th Edition. The primary unresolved issue is the use of younger, possibly more sensitive fish, which may necessitate a reevaluation of permit limits. SWRCB staff recommended to the Boards that new or renewed permit holders be allowed a time period in which laboratories can become proficient in conducting the new tests. A provision is included in this Order granting the Discharger 12 months to implement the new test method. In the interim, the Discharger may continue using the current test protocols. The previous Order included acute toxicity testing requirements and limits. These limits remained unchanged in this Order, although monitoring frequency has been reduced from monthly to quarterly. Based on the nature of the discharge and a review of self-monitoring data, a reduced monitoring frequency is permissible. The Discharger's monitoring data indicate that from 2000-2002 survival rates ranged from 75-100 percent, which complies with effluent limitations.

Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy

49. *Insufficient Effluent and Ambient Background Data.* There are insufficient data to determine reasonable potential and calculate numeric WQBELs, where appropriate, for most pollutants listed in the SIP.
50. *SIP- Required Dioxin study.* The SIP states that each Board shall require major and minor POTWs and industrial dischargers in its region to conduct effluent monitoring for the 2,3,7,8-TCDD congeners whether or not an effluent limit is required for 2,3,7,8-TCDD. The monitoring is intended to assess the presence and amounts of the congeners being discharged to inland surface waters, enclosed bays, and estuaries. The Boards will use these monitoring data to establish strategies for a future multi-media approach to control these chemicals.
51. On August 6, 2001, the Board sent a letter to all the permitted dischargers pursuant to Section 13267 of the California Water Code requiring the submittal of effluent and receiving water data on priority pollutants. This formal request for technical information addresses the insufficient effluent and ambient background data, and the dioxin study. The letter (described above) is referenced throughout the permit as the "August 6, 2001 Letter".
52. Pursuant to the August 6, 2001 Letter from Board Staff, the Discharger is required to submit workplans and sampling results for characterizing the levels of selected constituents in the effluent and ambient receiving water. The Discharger's work plan was approved by the Board's Executive Officer by letter dated January 10, 2002.
53. *Monitoring Requirements (Self-Monitoring Program).* The SMP includes monitoring at the outfalls for conventional, non-conventional pollutants, and acute toxicity. Much of the monitoring has not changed from the previous Order. To ensure that the discharge of treated sanitary wastewater does not pose a threat to groundwater or create nuisance conditions, this permit includes monthly monitoring for TDS and dissolved oxygen, and quarterly monitoring for total Kjeldahl nitrogen and nitrate. Since the Discharger has not observed acute toxicity in industrial effluent, the monitoring frequency has been reduced from monthly to quarterly. To determine compliance with effluent limitations, this Order requires the Discharger to sample each "batch" of industrial wastewater for copper and zinc intended for surface water discharge prior to initiating surface water discharges.

Radioactive Substances

54. The existing Order states the Discharger voluntarily ceased discharge of industrial wastewaters containing site generated radioactive substances to surface waters in 1980. The Discharger does not discharge waste evaporator distillate to the industrial wastewater system; therefore, the source of radioactive substances have been eliminated from the industrial wastewater stream (Waste 002).
55. Specific radiological effluent and receiving water limits are not included in this Order because the NRC and the California Department of Health Services (DHS) have primary responsibility for regulation of such constituents in wastewater discharges pursuant to the Code of Federal Regulations-Energy, Title 10, Chapter 1, Part 20 et seq. and in the California Code of Regulation Titles 17 and 22 (Regulations for Radiation Control and for Domestic Water Quality and Monitoring, respectively).
56. The Basin Plan provides that ground and surface waters designated for domestic or municipal drinking water supply, such as the Alameda Creek watershed, shall not contain concentrations of

radionuclides in excess of the following objectives: 5 pCi/l (pico-curies per liter) of combined Radium-226 and Radium-228, 15 pCi/l of Gross Alpha Particle Activity, 20,000 pCi/l of Tritium, 8 pCi/l of Strontium-90, and 50 pCi/l of Gross Beta Particle Activity. These objectives conform with the Maximum Contaminant Levels contained in Title 22 of the California Code of Regulations administered by the DHS and the Primary Drinking water limits specified by the U.S.EPA.

Other Discharge Characteristics and Permit Conditions

57. *NPDES Permit.* This Order serves as an NPDES Permit, adoption of which is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code [California Environmental Quality Act (CEQA)] pursuant to Section 13389 of the California Water Code.
58. *Notification.* The Discharger and interested agencies and persons have been notified of the Board's intent to reissue requirements for the existing discharges and have been provided an opportunity to submit their written views and recommendations. Board staff prepared a Fact Sheet and Response to Comments, which are hereby incorporated by reference as part of this Order.
59. *Public Hearing.* The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to the provisions of Division 7 of the California Water Code, regulations, and plans and policies adopted thereunder, and to the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, that the Discharger shall comply with the following:

A. DISCHARGE PROHIBITIONS

1. Sanitary Wastewater (Waste 001)
 - a. No sanitary wastewater shall be allowed to escape the designated disposal area, either by surface flow or airborne spray.
 - b. No sanitary wastewater shall be discharged to any area other than the designated sanitary wastewater disposal area as shown in Attachment A.
 - c. The discharge of sanitary wastewater to spray areas shall cease immediately when any specification or prohibition is in threatened violation.
 - d. There shall be no bypass or overflow of waste to waters of the State from the wastewater collection, treatment, or disposal system.
2. Industrial Wastewater (Waste 002)
 - a. The discharge of all process wastes, wash down water, solvents, oils, other products of petroleum origin, organic and inorganic chemicals is prohibited.
 - b. The discharge of all conservative toxic and deleterious substances above those levels which can be achieved by a program acceptable to the Board is prohibited.
 - c. After November 1, 2003, no industrial wastewater shall be discharged to sanitary wastewater disposal area unless approved in writing by the Executive Officer.
 - d. Except for discharges to sanitary disposal area allowed by Discharge Prohibition A.2c, no industrial wastewater shall be discharged to any area other than the designated industrial wastewater disposal areas and outfalls as described in Finding No. 6.
 - e. No industrial wastewater discharged to land shall be allowed to escape the disposal areas described in Finding No. 6.

B. EFFLUENT LIMITATIONS

1. Sanitary Wastewater (Waste 001)

- a. The discharge of Waste 001 shall not cause degradation of groundwater suitable for domestic use or cause an increase in any quality parameter that would make groundwater unsuitable for irrigation use.
- b. The nutrient loading to any portion of the designated area for Waste 001 disposal shall not exceed crop demand.
- c. Waste 001 as discharged, shall consist only of disinfected, treated sanitary wastewater as described in Finding No. 6 and shall meet the following quality limits at all times:

Coliform Organisms: The median MPN shall not exceed 23 coliform organisms per 100 milliliters of sample, as determined from the bacteriological results of the last seven (7) samples, and the number of coliform organisms shall not exceed 240 coliform organisms per 100 milliliters in any two (2) consecutive samples.

pH 6.0 minimum, 9.0 maximum

Dissolved Oxygen 1.0 mg/L, minimum

- d. The public shall be effectively excluded from the sanitary wastewater (Waste 001) disposal area. This area shall be clearly identified with posted notices to the public.
- e. The sanitary wastewater disposal area shall be managed to prevent breeding of mosquitoes. More specifically:
 - i. All applied water must infiltrate completely within 10 days.
 - ii. Ditches (areas where water tends to pond) must be maintained free of emergent, marginal, and floating vegetation.
 - iii. Low pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store water.

2. Industrial Wastewater Effluent Limitations for Surface Water Discharge (Waste 002-SW)

Waste 002-SW discharged into Vallecitos Creek or the onsite lake shall meet the requirements below:

- a. Waste 002-SW shall meet the following limits for conventional pollutants:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>Daily Maximum</u>
Temperature	Deg. F			85
Settleable Solids	ml/l-hr	0.1		0.2
Total Suspended Solids	mg/L	30	45	
Oil and Grease	mg/L	10		20

- b. The pH of the discharge shall not exceed 8.5 nor be less than 6.5.

- c. **Whole Effluent Acute Toxicity:** Representative samples of the effluent (Waste 002) shall meet the following limits for acute toxicity. Compliance with these limits shall be achieved in accordance with Provision D.2 of this Order:
- i. The survival of bioassay test organisms in 96-hour bioassays of undiluted effluent shall be:
 - (1) A three (3)-sample median value of not less than 90 percent survival; and
 - (2) A single (1) value of not less than 70 percent survival.
 - ii. These acute toxicity limits are further defined as follows:
 - (1) **3-sample median limit:** Any bioassay test showing survival of 90 percent or greater is not a violation of this limit. A bioassay test showing survival of less than 90 percent represents a violation of this effluent limit, if one of the past two bioassay tests also shows less than 90 percent survival.
- d. Waste 002-SW shall meet the following limitations for total dissolved solids and chlorides:

	<u>Units</u>	<u>TDS</u>	<u>Chlorides</u>
90-day arithmetic mean	mg/L	250	60
90-day, 90 th percentile	mg/L	360	100
Daily maximum	mg/L	500	250

- e. **Toxic Substances:** The discharge of effluent from Waste 002-SW shall not exceed the following limits:

<u>Constituent</u>	<u>Units</u>	<u>Average Monthly</u>	<u>Maximum Daily</u>	<u>Notes</u>
Copper	µg/L	6.1	18	(1)(2)
Zinc	µg/L	44	100	(1)(2)

- (1) (a) All analyses shall be performed using current U.S.EPA methods, or equivalent methods approved in writing by the Executive Officer.
- (b) Limits apply to the average concentration of all samples collected during the averaging period (Daily = 24-hour period; Monthly = calendar month).
- (2) As outlined in Section 2.4.5 of the SIP, compliance with final limits is determined by comparing the effluent data with the corresponding reported Minimum Levels (MLs) for that analysis. A daily maximum or monthly average value for a given constituent shall be considered non-compliant with the effluent limits only if it exceeds the effluent limitation and the reported ML for that constituent. The table below indicates the highest minimum level that the Discharger's laboratory must achieve for calibration purposes.

<u>Constituent</u>	<u>Minimum Level</u>	<u>Units</u>
Copper	2	µg/L
Zinc	20	µg/L

3. Industrial Wastewater Effluent Limitations for Land Discharge (Waste 002-L)

Waste 002-L discharged to the designated industrial wastewater disposal area shall meet the requirements below.

- a. The discharge of Waste 002-L shall not cause degradation of groundwater suitable for domestic use or cause an increase in any quality parameter that would make groundwater unsuitable for irrigation use.
- b. The pH of the discharge shall not exceed 9.0 nor be less than 6.0.
- c. Oil and Grease shall not exceed a monthly average of 10 mg/L or a daily maximum of 20 mg/L.
- e. The industrial wastewater disposal area shall be managed to prevent breeding of mosquitoes. More specifically:
 - i. All applied water must infiltrate completely within 10 days.
 - ii. Ditches (areas where water tends to pond) must be maintained free of emergent, marginal, and floating vegetation.
 - iii. Low pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store water.

4. Sanitary and Industrial Wastewater.

For Waste-001 and Waste-002-L discharges, the total dissolved solids concentration shall not exceed a monthly average of 500 mg/L. The Discharger shall determine compliance by calculating a weighted average:

$$\text{TDS (monthly average)} = [\Sigma(Q_{W-001} * C_{W-001}) + \Sigma(Q_{W-002-L} * C_{W-002-L})] / \Sigma(Q_{W-001} + Q_{W-002-L})$$

Where: Q = Quantity Discharged (gallons)

C = TDS concentration (mg/L)

C. RECEIVING WATER LIMITATIONS

1. The discharges shall not cause the following conditions to exist in waters of the State at any place:
 - a. Floating, suspended, or deposited macroscopic particulate matter or foam;
 - b. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;
 - c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;
 - d. Visible, floating, suspended, or deposited oil or other products of petroleum origin; and
 - e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or which render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.

2. The discharges shall not cause nuisance or adversely affect the beneficial uses of the receiving water.
3. The discharges shall not cause the following limits to be violated in waters of the State at any one place within one foot of the water surface:

- a. Dissolved Oxygen: 7.0 mg/L, minimum

The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, then the discharges shall not cause further reduction in ambient dissolved oxygen concentrations.

- b. Dissolved Sulfide: 0.1 mg/L, maximum

- c. pH: The pH shall not be depressed below 6.5 nor raised above 8.5, nor caused to vary from normal ambient pH by more than 0.5 pH units.

- d. Un-ionized Ammonia: 0.025 mg/L as N, annual median; and
0.4 mg/L as N, maximum.

- e. Nutrients: Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

4. The discharges shall not cause a violation of any particular water quality standard for receiving waters adopted by the Board or the State Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

D. PROVISIONS

1. **Permit Compliance and Rescission of Previous Waste Discharge Requirements**

The Discharger shall comply with all sections of this Order beginning on **July 1, 2003**. Requirements prescribed by this Order supersede the requirements prescribed by Order No. 97-024.

Toxicity Requirements

2. **Whole Effluent Acute Toxicity**

Compliance with acute toxicity requirements of this Order shall be achieved in accordance with the following:

- a. From permit adoption date to no later than June 30, 2004:
 - (1) Compliance with the acute toxicity effluent limits of this Order shall be evaluated by measuring survival of test organisms exposed to 96-hour static renewal bioassays.
 - (2) Test organisms shall be rainbow trout or three-spined sticklebacks unless specified otherwise in writing by the Executive Officer.
 - (3) All bioassays may be performed according to the "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms," 3rd Edition, with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).
- b. By no later than July 1, 2004:

- (1) Compliance with the acute toxicity effluent limits of this Order shall be evaluated by measuring survival of test organisms exposed to 96-hour flow through bioassays, or static renewal bioassays.
- (2) Test organisms shall be rainbow trout or fathead minnow unless specified otherwise in writing by the Executive Officer.
- (3) All bioassays shall be performed according to the "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms," 5th Edition, with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).

3. TRE for Acute Toxicity

If there is a violation of the acute toxicity effluent limitation, the Discharger shall conduct a toxicity reduction evaluation (TRE), which shall initially involve a toxicity identification evaluation (TIE). The TIE shall be in accordance with a work plan acceptable to the Executive Officer. The TIE shall be initiated within 30 days of the date of violation. The objective of the TIE shall be to identify the chemical or combination of chemicals that are causing the observed toxicity. The Discharger shall employ currently available TIE methodologies. As the Discharger identifies or characterizes toxic constituents, it shall continue the TRE by determining the source(s) of the toxic constituent(s) and evaluating alternative strategies for reducing or eliminating the constituent(s) from the discharge. The Discharger shall take all reasonable steps to reduce toxicity to the required level. The Board recognizes that identification of causes of toxicity may not be successful in all cases. Consideration of enforcement action by the Board will be based in part on the Discharger's actions in identifying and reducing sources of toxicity.

4. Operations and Maintenance Manual

The Discharger shall review, and update as necessary, its Operations and Maintenance Manual annually or within 90 days of completion of any significant facility or process changes. The Discharger shall submit to the Board, by April 30 of each year, a letter describing the results of the review process including an estimated time schedule for completion of any revisions determined necessary, and a description or copy of any completed revisions.

5. Contingency Plan Update

- a. The Discharger shall maintain a Contingency Plan as required by Board Resolution 74-10, and as prudent in accordance with current industrial facility emergency planning. The discharge of pollutants in violation of this Order where the Discharger has failed to develop and/or adequately implement a contingency plan will be the basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.
- b. The Discharger shall regularly review, and update as necessary, the Contingency Plan in order for the plan to remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and updates shall be completed as necessary.
- c. Within 120 days of the adoption of this Order and by June 30 of each year, the Discharger shall submit to the Board a report describing the status of its Contingency Plan review and update. This report shall include a description or copy of any completed revisions, or a statement that no changes are needed.

6. Storm Water Pollution Prevention Plan and Annual Report

The Discharger shall update and submit an updated Storm Water Pollution Prevention Plan (SWPPP) acceptable to the Executive Officer by October 1st of each year. If GEVNC determines that it does not need to update its SWPPP, it shall submit a letter to the Executive Officer that indicates no revisions are necessary and the last year it updated its SWPPP. The Discharger shall implement the

SWPPP and the SWPPP shall comply with the requirements contained in the attached Standard provisions.

The Discharger shall submit an annual storm water report by July 1 of each year covering data for the previous wet weather season for the identified storm water discharge point. The annual storm water report shall, at a minimum, include: (a) a tabulated summary of all sampling results and a summary of visual observations taken during the inspections; and (b) a comprehensive discussion of the compliance record and any corrective actions taken or planned to ensure compliance with waste discharge requirements.

7. Nutrient Management Plan

Within 60 days of the effective date of this Order, the Discharger shall submit a Nutrient Management Plan for the area designated for treated sanitary wastewater disposal. Specifically, this should include (a) the estimated monthly nitrogen loading based on TKN and nitrate sampling, (b) the estimated monthly nitrogen uptake of grasses and weeds in the disposal area, and (c) any measures the Discharger needs to implement to comply with Effluent Limitation B.1b.

8. Disinfection Study

Within 90 days of the effective date of this Order, the Discharger shall submit a Disinfection Study that documents how it will optimize the use of sodium hypochlorite to minimize TDS increases in treated sanitary wastewater.

9. Self-Monitoring Program

The Discharger shall comply with the Self-Monitoring Program (SMP) for this Order as adopted by the Board. The SMP may be amended by the Executive Officer pursuant to U.S.EPA regulations 40 CFR 122.62, 122.63, and 124.5.

10. Standard Provisions and Reporting Requirements

The Discharger shall comply with all applicable items of the Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993 (attached), or any amendments thereafter. Where provisions or reporting requirements specified in this Order are different from equivalent or related provisions or reporting requirements given in 'Standard Provisions', the specifications of this Order shall apply.

11. Change in Control or Ownership

In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Board. To assume responsibility of and operations under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order (see Standard Provisions & Reporting Requirements, August 1993, Section E.4.). Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code.

12. Permit Reopener

The Board may modify or reopen this Order and Permit prior to its expiration date in any of the following circumstances:

- a. If present or future investigations demonstrate that the discharge(s) governed by this Order and Permit will or have a reasonable potential to cause or contribute to adverse impacts on water quality and/or beneficial uses of the receiving waters;
 - (1) This may include submission of water quality data collected as required by the August 6, 2001 letter.

- b. New or revised WQOs come into effect for the San Francisco Bay estuary and contiguous water bodies (whether statewide, regional, or site-specific). In such cases, effluent limitations in this permit will be modified as necessary to reflect updated WQOs. Adoption of effluent limitations contained in this Order and Permit are not intended to restrict in any way future modifications based on legally adopted WQOs or as otherwise permitted under Federal regulations governing NPDES permit modifications;
- c. If translator or other water quality studies provide a basis for determining that a permit condition(s) should be modified. The Discharger may request permit modification on this basis. The Discharger shall include in any such request an antidegradation and antibacksliding analysis.

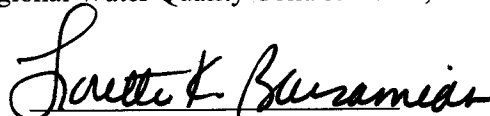
13. NPDES Permit

This Order shall serve as a National Pollutant Discharge Elimination System (NPDES) permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective on **July 1, 2003**, provided the U.S.EPA Regional Administrator has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

14. Order Expiration and Reapplication

- a. This Order expires on **June 30, 2008**.
- b. In accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code, the Discharger must file a report of waste discharge no later than 180 days before the expiration date of this Order as application for reissue of this permit and waste discharge requirements. The application shall be accompanied by a summary of all available water quality data including conventional pollutant data from the most recent 3 years, and of toxic pollutant data from the most recent 5 years including priority pollutant monitoring conducted pursuant to the Board's letter of August 6, 2001.

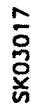
I, Loretta K. Barsamian, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on June 18, 2003.


LORETTA K. BARSAMIAN
Executive Officer

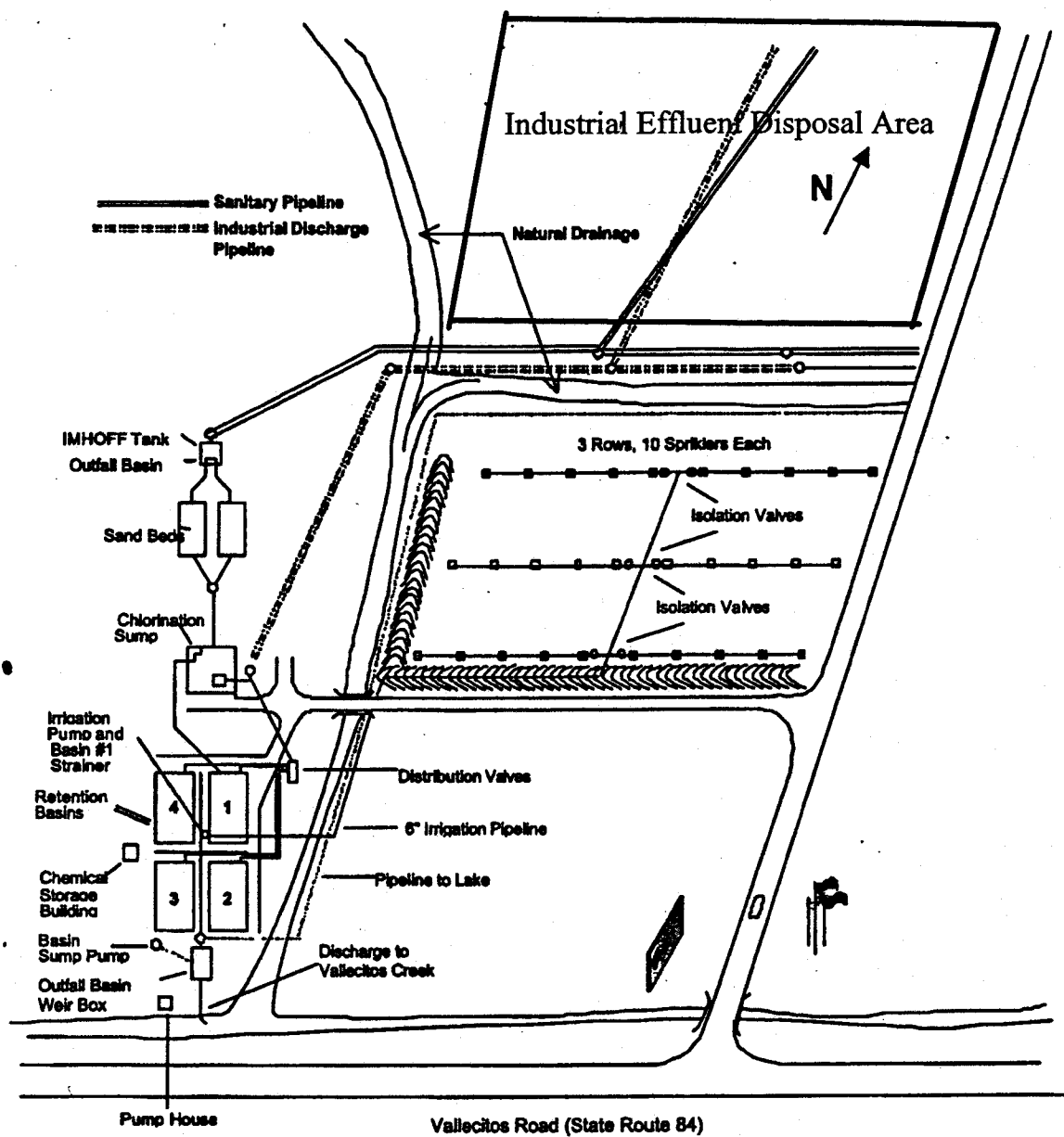
Attachments:

- A. Discharge Facility Location Map
- B. Discharge Facility Treatment Process Diagram
- C. Self-Monitoring Program, Part B
- D. Fact Sheet
- E. Self-Monitoring Program, Part A, (August 1993)*
- F. Standard Provisions and Reporting Requirements, (August 1993)*
- G. Board Resolution No. 74-10*

** Note: Self-Monitoring Program Part A (August 1993), Standard Provisions and Reporting Requirements (August 1993), and Resolution No. 74-10 are not attached but are available for review or download on the Board's website at www.swrcb.ca.gov/rwqcb2.*



Attachment A
General Electric Vallecitos Nuclear Center



Attachment B
General Electric Vallecitos Nuclear Center
Discharge Facility Treatment Process Diagram

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

SELF-MONITORING PROGRAM

FOR

**GENERAL ELECTRIC COMPANY
VALLECITOS NUCLEAR CENTER
PLEASANTON, ALAMEDA COUNTY**

NPDES PERMIT NO. CA0006246

ORDER NO. R-2-2003-0052

Consists of:

**Part A (not attached)
Adopted August 1993**

and

**Part B (Attached)
Adopted: June 18, 2003
Effective: July 1, 2003**

Note: Part A (dated August 1993, Standard Provisions and Reporting Requirements for NPDES Surface Water Discharger Permits (dated August 1993), and Resolution No. 74-10 referenced in this Self Monitoring Program are not attached but are available for review or download on the Board's website at www.swrcb.ca.gov/rwqcb2.

SELF-MONITORING PROGRAM – Part B

I. Description of Sampling and Observation Stations

<u>Station</u>	<u>Description</u>
A. EFFLUENT	
E-001	At any point downstream from the disinfection facilities for the sanitary waste, where all sewage are present and adequate disinfection is assured, and prior to disposal to the designated spray area on the Discharger's property.
E-002-SW	At any point in the retention basin that is representative of noncontact cooling water (Waste 002) before it is discharged into the unnamed drainage ditch that is tributary to Vallecitos Creek or the onsite lake.
E-002-L	At any point in the retention basin that is representative of noncontact cooling water (Waste 002) before it is discharged to the designated industrial wastewater disposal areas.
E-003	At any point in the outfall for Waste 003 where all storm water tributary to that are present.
B. RECEIVING WATERS	
C-4	Located in the intermittent unnamed stream crossing the southern boundary of the site above the point where effluent from the Discharger enters the stream.
C-V	Located at a point in Vallecitos Creek or the unnamed ditch tributary to Vallecitos Creek downstream of where all waste discharged from the Discharger is present.

II. Schedule of Sampling, Measurements, and Analysis

- A. The schedule of sampling, measurements, and analysis shall be that given in Table I (attached).
- B. Sample collection, storage, and analyses shall be performed according to requirements in the latest 40 CFR 136, in the Permit, or as specified by the Executive Officer.

III. Reporting Requirements

- A. General Reporting Requirements are described in Section E of the Board's *Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits*, dated August 1993.
- B. Self-monitoring reports for each calendar quarter shall be submitted quarterly by the 30th day from the end of the quarter. The required contents of these reports are described in Section F.4. of Part A.

- C. An Annual Report shall be submitted for each calendar year. The report shall be submitted to the Board by March 1 of each year. The required contents of the Annual Report are described in Section F.5 of Part A.
- D. Any overflow, bypass, or any significant noncompliance incident that may endanger health or the environment shall be reported in accordance with Sections F.1 and F.2 of Part A. The date, time, duration, location, estimated volume of wastewater discharged, and corrective actions taken for these events shall be reported in quarterly self-monitoring reports.
- E. Any removal of septage from the septic tank and other maintenance activities shall be reported in quarterly self-monitoring reports. The location of septage disposal shall be identified.

IV. Modifications to Part A

A. Exemptions from Part A: Self-Monitoring Report

This monitoring program does not include the following sections of Part A: C.2d; C.2.f; C.4; C.5; D.4, and E.3.

B. Modification to section F.1 of Part A: Self-Monitoring Report

- 1. The second sentence of section F.1 shall be modified as follows: "Spills shall be reported immediately after the occurrence to the Regional Board at 510-622-2300 on weekdays during 8 a.m. to 5 p.m., and to the Office of Emergency Services at 1-800-852-7550 on weekends or when the spill occurred outside these hours."
- 2. Section F.1.b is revised to read: "Best estimate of volume involved..."
- 3. Section F.1.d is revised to read: "Cause of spill or overflow..."
- 4. Section F.1.i is revised to read: "Agencies or persons notified...."

C. Modification to section F.4 of Part A: Self-Monitoring Report:

Quarterly self-monitoring report: The purpose of the report is to document treatment performance, effluent quality and compliance with waste discharge requirements prescribed by this Order, as demonstrated by the monitoring program data and the Discharger's operation practices. For each calendar quarter, a self-monitoring report (SMR) shall be submitted to the Board in accordance with the following:

- 1. The report shall be submitted to the Board no later than 30 days from the last day of the reporting period.
- 2. *Letter of Transmittal:* Each report shall be submitted with a letter of transmittal. This letter shall include the following:
 - a. Identification of all violations of effluent limits or other discharge requirements found during the monitoring period;
 - b. Details of the violations: parameters, magnitude, test results, frequency, and dates;
 - c. The cause of the violations;
 - d. Discussion of corrective actions taken or planned to resolve violations and prevent recurrence, and dates or time schedule of action implementation. If previous reports have been submitted that address corrective actions, reference to such reports is satisfactory;

- e. Signature: The letter of transmittal shall be signed by the Discharger's principal executive officer or ranking elected official, or duly authorized representative, and shall include the following certification statement:

"I certify under penalty of law that this document and all attachments have been prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

3. *Compliance Evaluation Summary:* Each report shall include a compliance evaluation summary. This summary shall include, for each parameter for which effluent limits are specified in the Permit, the number of samples taken during the monitoring period, and the number of samples in violation of applicable effluent limits.
4. *Results of Analyses and Observations.*
- a. Tabulations of all required analyses and observations, including parameter, sample date and time, sample station, and test result;
 - b. If any parameter specified in Table 1 of Part B is monitored more frequently than required by this permit and SMP, the results of this additional monitoring shall be included in the monitoring report, and the data shall be included in data calculations and compliance evaluations for the monitoring period;
 - c. Calculations for all effluent limits that require averaging of measurements shall utilize an arithmetic mean, unless specified otherwise in this permit or SMP.
5. *Effluent Data Summary – U.S.EPA NPDES Discharge Monitoring Reports:* Summary tabulations of monitoring data including maximum, minimum and average values for subject monitoring period shall be reported in accordance with the format given by the U.S.EPA NPDES Discharge Report(s) (DMRs; U.S.EPA Form 3320-1 or successor). Copies of these DMRs shall be provided to U.S.EPA as required by U.S.EPA.
6. *Data Reporting for Results Not Yet Available:* The Discharger shall make all reasonable efforts to obtain analytical data for required parameter sampling in timely manner. The Board recognizes that certain analyses require additional time in order to complete analytical processes and result reporting. For cases where required monitoring parameters require additional time to complete analytical processes and reporting, and results are not available in time to be included in the SMR for the subject monitoring period, such cases shall be described in the SMR. Data for these parameters, and relevant discussions of any observed violations, shall be included in the next following SMR after the data become available.
7. *Report Submittal:* The Discharger shall submit SMRs to:
- Executive Officer
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612
Attn: NPDES Division

D. Modification to section F.5 of Part A: Annual Report:

An Annual Report shall be submitted for each calendar year. The report shall be submitted to the Board by March 1 of the following year. This report shall include the following:

1. Both tabular and graphical summaries of monitoring data collected during the calendar year that characterizes treatment plant performance and compliance with waste discharge requirements.
2. A comprehensive discussion of treatment plant performance and compliance with waste discharge requirements. This discussion should include any corrective actions taken or planned such as changes to facility equipment or operation practices which may be needed to achieve compliance, and any other actions taken or planned that are intended to improve performance and reliability of the Discharger's wastewater collection, treatment or disposal practices.

E. Additions to Part A of Self-Monitoring Program:

1. Reporting Data in Electronic Format:

The Discharger has the option to submit all monitoring results in electronic reporting format approved by the Executive Officer. If the Discharger chooses to submit the SMRs electronically, the following shall apply:

- a. *Reporting Method:* The Discharger shall submit SMRs electronically via the process approved by the Executive Officer in a letter dated December 17, 1999, Official Implementation of Electronic Reporting System (ERS).
- b. *Modification of reporting requirements:* Reporting requirements F.4 in the attached *Self-Monitoring program, Part A*, dated August 1993, shall be modified as follows. In the future, the Board intends to modify Part A to reflect these changes.
- c. *Quarterly Report Requirements:* For each calendar quarter, a self-monitoring report (SMR) shall be submitted to the Board in accordance with the following:
 - i. The report shall be submitted to the Board no later than 30 days from the last day of the reporting quarter.
 - ii. *Letter of Transmittal:* Each report shall be submitted with a letter of transmittal. This letter shall include the following:
 - (i) Identification of all violations of effluent limits or other discharge requirements found during the monitoring period;
 - (ii) Details of the violations: parameters, magnitude, test results, frequency, and dates;
 - (iii) The cause of the violations;
 - (iv) Discussion of corrective actions taken or planned to resolve violations and prevent recurrence, and dates or time schedule of action implementation. If previous reports have been submitted that address corrective actions, reference to such reports is satisfactory.
 - (v) *Signature:* The letter of transmittal shall be signed by the Discharger's principal executive officer or ranking elected official, or duly authorized representative, and shall include the following certification statement:

"I certify under penalty of law that this document and all attachments have been prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

- (vi) Compliance Evaluation Summary: Each report shall include a compliance evaluation summary. This summary shall include the number of samples in violation of applicable effluent limits.
 - (vii) Results of Analyses and Observations.
 - (viii) Tabulations of all required analyses and observations, including parameter, sample date, sample station, and test result.
 - (ix) If any parameter is monitored more frequently than required by this permit and SMP, the results of this additional monitoring shall be included in the monitoring report, and the data shall be included in data calculations and compliance evaluations for the monitoring period.
 - (x) Calculations for all effluent limits that require averaging of measurements shall utilize an arithmetic mean, unless specified otherwise in this permit or SMP.
- d. Data Reporting for Results Not Yet Available: The Discharger shall make all reasonable efforts to obtain analytical data for required parameter sampling in a timely manner. The Board recognizes that certain analyses require additional time in order to complete analytical processes and result reporting. For cases where required monitoring parameters require additional time to complete analytical processes and reporting, and results are not available in time to be included in the SMR for the subjected monitoring period, such cases shall be described in the SMR. Data for these parameters, and relevant discussions of any observed violations, shall be included in the next following SMR after the data become available.

V. Miscellaneous Reporting

1. The Discharger shall submit the following quarterly: The disposal location and quantity of all sewage sludge removed from the site during the previous quarter.
2. The Discharger shall submit a copy of any routine reports done for the State Department of Health Services or Nuclear Regulatory Commission of the effects of radioactive substances on the Discharger's effluent, receiving waters, and groundwaters, on-site or off-site.

VI. Self-Monitoring Program Certification

I, Loretta K. Barsamian, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Board Order No. R-2-2003-0052.
2. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the Discharger, and revisions will be ordered by the Executive Officer.
3. Is effective **as of July 1, 2003.**


LORETTA K. BARSAMIAN
Executive Officer

Attachment: Table I – Schedule for Sampling, Measurements, and Analyses

TABLE 1
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSES [1]

Sampling Station	E-001	E-002-SW	E-002-L	E-003	C4, CV [2]
Type of Sample	G	G	G	G	G
Parameter (units) [notes]					
Flow rate (mgd) [1]	E	E	E	[8]	
pH (s.u.)	E	W	W	[8]	Q
Temperature (deg. F)		W	W		
Total coliform (MPN/100 ml) [3]	E				
Dissolved oxygen (mg/L)	E	M	M		Q
Total dissolved solids (mg/L & kg/d)	E	M	M		
Settleable solids (ml/l/hr)		M	[7]		
Total suspended solids (mg/L & kg/d)		M	[7]	[8]	
Chlorides (mg/L & kg/d)		M	[7]		
Oil and grease (mg/L & kg/d)		M	M	[8]	
Copper (µg/L) [4]		E	[7]		
Zinc (µg/L) [4]		E	[7]		
Acute toxicity (% Survival) [5]		Q	[7]		
Nitrate (as NO ₃)	Q				
Total Kjeldahl Nitrogen	Q				
Total organic carbon (mg/L & kg/d)				[8]	
Specific conductance (µmhos/cm)				[8]	
Dissolved sulfide (mg/L) [6]					Q
Un-ionized ammonia (as N) (mg/L)					Q
Applicable Standard Observations				[8]	Q

LEGEND FOR TABLE 1Type of Stations:

E = effluent

C = receiving water

Frequency of Sampling:

C = continuous sampling

W = once each week

M = once each month

Q = once each calendar quarter (at least two months apart)

E = each occurrence

2/M = twice per month

Types of Samples:

Co = continuous sampling

G = grab sample

FOOTNOTES FOR TABLE 1

- [1] Flow Monitoring: The volume of each basin discharge shall be recorded. The following information shall also be recorded daily for the quarterly report:

Average Daily Flow (mgd)
 Maximum Daily Flow (mgd)
 Minimum Daily Flow (mgd)

- [2] Grab samples of receiving water stations shall be collected on days coincident with samples collected for the analysis of regulated parameters. Sampling is required only when there is sufficient natural flow in the unnamed ditch or Vallecitos Creek to enable collection of samples.

- [3] When replicate or duplicate analyses are made of a coliform sample, the reported result shall be the arithmetic mean of the analysis values.
- [4] The Discharger shall monitor each “batch” of wastewater prior to discharge through Outfall 002 (E-002-SW discharges) for copper and zinc.
- [5] Fish Toxicity shall be determined using test methods in accordance with *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition* (or *Third Edition* as described in Provision D.2 of this Order). Effluent used for fish bioassays must be undiluted, disinfected, dechlorinated effluent. The bioassay water shall be tested for pH, dissolved oxygen, and temperature at the start of the bioassay, and then daily for the duration of the bioassay test (i.e., at 0, 24, 48, 72, and 96 hours from the start of the bioassay test). Samples shall not be held for more than 48 hours, except if there are days when no discharge occurs during a 96-hour bioassay, then bioassay may be renewed with reserved sample from the most recent discharge. If no reserve sample is available, the bioassay may be completed as a static test or renewed with a sample from the next discharge when it becomes available.
- [6] Receiving water analysis for sulfides is necessary when dissolved oxygen is less than 1.0 mg/L.
- [7] For discharges to E-002-L, the Discharger is not required to monitor for settleable solids, total suspended solids, chloride, copper, zinc, or acute toxicity.
- [8] The discharge flow rate for the storm water discharge (Waste 003) shall be estimated at the time of sample collection. The Discharger shall also report the total volume of discharge for each month. The Discharger may calculate storm water volumes by using an appropriate site runoff coefficient, area of drainage, and precipitation records or measurements. Samples are required for each constituent twice during each wet weather period (October 1 through April 30) in accordance with Part A Section C.3 of the self-monitoring program. For safety reasons, the Discharger may choose to sample only storms occurring during daylight hours. The Discharger shall collect grab samples during the first 30 minutes of discharge unless it can explain why this was not possible. In such cases, the Discharger must collect samples within the first hour of discharge. The Discharger shall also conduct visual observations at least monthly during the wet weather period and at least twice during the dry weather period.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
1515 CLAY STREET, SUITE 1400
OAKLAND, CA 94612
(510) 622 - 2300 Fax: (510) 622 - 2460

FACT SHEET

for

NPDES PERMIT and WASTE DISCHARGE REQUIREMENTS for
GENERAL ELECTRIC COMPANY
VALLECITOS NUCLEAR CENTER
PLEASANTON, ALAMEDA COUNTY
NPDES Permit No. CA0006246
ORDER NO. R2-2003-0052

PUBLIC NOTICE:

Written Comments

- Interested persons are invited to submit written comments concerning this draft permit.
- Comments must be submitted to the Regional Board no later than 5:00 p.m. on **May 29, 2003**.
- Send comments to the Attention of Robert Schlipf.

Public Hearing

- The draft permit will be considered for adoption by the Board at a public hearing during the Board's regular monthly meeting at: Elihu Harris State Office Building, 1515 Clay Street, Oakland, CA; 1st floor Auditorium.
- This meeting will be held on: **June 18, 2003**, starting at 9:00 am.

Additional Information

- For additional information about this matter, interested persons should contact Regional Board staff member: Mr. Robert Schlipf, Phone: (510) 622-2478; email: rs@rb2.swrcb.ca.gov

This Fact Sheet contains information regarding an application for waste discharge requirements and National Pollutant Discharge Elimination System (NPDES) permit by General Electric Company, Vallecitos Nuclear Center (Discharger) for treated sanitary and industrial wastewater discharges. The Fact Sheet describes the factual, legal, and methodological basis for the proposed permit and provides supporting documentation to explain the rationale and assumptions used in deriving the limits.

I. INTRODUCTION

The Discharger applied to the Board for reissuance of waste discharge requirements to discharge industrial effluent (once through cooling water) to land or waters of the State and the United States and to discharge sanitary wastewater to land under the National Pollutant Discharge Elimination System (NPDES). The Discharger submitted its Report of Waste Discharge (ROWD) on November 28, 2001 and amended it on March 13 and April 11, 2003.

The primary functions of the Discharger are nuclear fuel and materials research and production of radio-isotopes for medical and other uses. Facilities onsite include: a small nuclear test reactor known as Nuclear Test Reactor; laboratories for studies in radiochemistry, metallurgy, and nuclear fuels; machine shops; and administrative facilities. The Discharger also has (a) a test reactor known as GETR that it shut down on October 27, 1977, and (b) two other nuclear reactors that it shut down

in the mid 1960s. At this time, the Discharger has no plans for reactivating these two reactors or the GETR. The Discharger generates both sanitary and industrial wastewater, which it collects, treats, and discharges separately. This NPDES permit regulates the discharges of effluent from both systems. The sanitary wastewater discharges are to land. The Discharger also proposes to discharge industrial effluent to land, but wants to retain the flexibility of being able to discharge it to Vallecitos Creek. The Discharger routes storm water associated with industrial activity to Vallecitos Creek. Vallecitos Creek is tributary to Arroyo de la Laguna, which is tributary to Alameda Creek. Beneficial uses for Vallecitos Creek, as identified in the Basin Plan and based on known uses of the receiving waters near the discharge, are:

- a. Agricultural Supply
- b. Cold Freshwater Habitat
- c. Warm Freshwater Habitat
- d. Groundwater Recharge
- e. Water Contact Recreation
- f. Non-Contact Water Recreation
- g. Fish Spawning
- h. Fish Migration
- i. Wildlife Habitat

Vallecitos Creek is typically dry during the dry season. Regional Board staff determined that based on the nature of inflows, Vallecitos Creek is freshwater in character. Therefore, the effluent limitations specified in this Order for discharges to Vallecitos Creek are based on freshwater Basin Plan WQOs and freshwater CTR and NTR WQC.

The Basin Plan identifies existing and potential beneficial uses of groundwater in the Alameda Creek (Niles Cone) basin as municipal, domestic, industrial process, industrial service, and agricultural supply.

II. DESCRIPTION OF EFFLUENT

The table below presents the quality of the discharge, as indicated in the Discharger's self-monitoring reports submitted for the period from January 1999 through September 2002.

Table A. Summary of Discharge Data

Parameter	Average ¹	Range of Reported Values
Temperature °F		46 - 85
pH, standard units	--	6.2 - 8.6
TSS, mg/L	1.4	<1 - 3
TDS, mg/L	61	4 - 430
Chloride, mg/L	6.3	2.3 - 20
Oil and Grease, mg/L	²	<1 - 5.3 ⁴
Dissolved oxygen, mg/L	9.2	7.2 - 11.8
Chromium, total, µg/L	2.4	<1 - 5.35
Copper, µg/L	11	<2 - 93
Lead, µg/L	1.2	<0.5 - 1.8
Mercury, µg/L	³	<0.002 - <0.2
Zinc, µg/L	19	<1 - 80
Toxicity, acute, % survival	--	75 - 100

¹ For nondetect values, Board staff used ½ the detection limit to calculate average concentrations.

² There was only one detected value for oil and grease.

³ All reported values were below the detection limits.

⁴ The sample analyzed in September 2000 was collected improperly and resulted in a concentration of 120 mg/L. The effluent was re-sampled and the analysis indicated a concentration below detectable levels.

III. GENERAL RATIONALE

The following documents are the bases for the requirements contained in the proposed Order, and are referred to under the specific rationale section of this Fact Sheet.

- Federal Water Pollution Control Act, as amended (hereinafter the **CWA**).
- Federal Code of Regulations, Title 40 - Protection of Environment, Chapter 1, Environmental Protection Agency, Subchapter D, Water Programs, Parts 122-129 (hereinafter referred to as 40 CFR specific part number).
- Water Quality Control Plan, San Francisco Bay Basin, adopted by the Board on June 21, 1995 (hereinafter the **Basin Plan**). The California State Water Resources Control Board (hereinafter the **State Board**) approved the Basin Plan on July 20, 1995 and by California State Office of Administrative Law approved it on November 13, 1995. The Basin Plan defines beneficial uses and contains WQOs for waters of the State, including Vallecitos Creek.
- California Toxics Rules, Federal Register, Vol. 65, No. 97, May 18, 2000 (hereinafter the **CTR**).
- National Toxics Rules 57 FR 60848, December 22, 1992, as amended (hereinafter the **NTR**).
- State Board's Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, May 1, 2000 (hereinafter the **State Implementation Policy**, or **SIP**).
- Ambient Water Quality Criteria for Bacteria – 1986, U.S.EPA 440/5-84-002, January 1986.
- U.S.EPA Technical Support Document for Water Quality-Based Toxics Control, EPA/505/2-90-001, March 1991 (hereinafter **TSD**).

IV. SPECIFIC RATIONALE

Several specific factors affecting the development of limitations and requirements in the proposed Order are discussed as follows:

1. Recent Plant Performance

Section 402(o) of CWA and 40 CFR § 122.44(l) require that water quality-based effluent limits (**WQBELs**) in re-issued permits be at least as stringent as in the previous permit. The **SIP** specifies that interim effluent limitations, if required, must be based on current treatment facility performance or on existing permit limitations whichever is more stringent. In determining what constitutes "recent plant performance", best professional judgment (**BPJ**) was used. Effluent monitoring data collected from 1999 to 2002 are considered representative of recent plant performance.

2. Impaired Water Bodies in 303(d) List

The U.S.EPA Region 9 office approved the State's 303(d) list of impaired waterbodies on May 12, 1999. The list was prepared in accordance with section 303(d) of the CWA to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources. Vallecitos Creek is not listed as an impaired water body, although Alameda Creek and Arroyo de la Laguna are both listed as impaired for diazinon. Further, Alameda Creek eventually reaches the lower San Francisco Bay, and the lower San Francisco Bay is listed as an impaired water body. The pollutants impairing lower San Francisco Bay include copper, mercury, nickel, PCBs total, dioxin and furan compounds, chlordane, DDT, dieldrin, diazinon, dioxin-like PCBs, and exotic species.

The SIP requires final effluent limits for all 303(d)-listed pollutants to be based on total maximum daily loads (TMDLs) and wasteload allocation (WLA) results. The SIP and federal regulations also require that final concentration limits be included for all pollutants with reasonable potential. The SIP requires that where the Discharger has demonstrated infeasibility to meet the final limits, interim concentration limits, and performance-based mass limits for bioaccumulative pollutants, be established in the permit with a compliance schedule in effect until final effluent limits are adopted. In such cases, the SIP also requires the inclusion of appropriate provisions for waste minimization and source control.

3. Basis for Prohibitions

- a). Prohibition A.1 (Sanitary Wastewater): These prohibitions are based on the previous permit and BPJ.
- b). Prohibition A.2 (Industrial Wastewater): These prohibitions are based on the previous permit, the Basin Plan, and BPJ.

4. Basis for Effluent Limitations

- a) Effluent Limitations B.1 (Sanitary Wastewater): These limits are based on the previous permit, the Basin Plan and BPJ. The requirements for nutrient loading at agronomic rates, pH, and total coliform organisms are, in part, to ensure that the discharge does not degrade groundwater. The limitations for dissolved oxygen and for standing water and vegetation management are to ensure that nuisance conditions do not develop.
- b) Effluent Limitations B.2.a (Industrial Wastewater): There are no technology-based effluent limitation guidelines for this point source discharge. Effluent limitations for settleable solids, total suspended solids, and oil and grease are based on the previous permit, which are based on the Basin Plan, other State plans and policies, current plant performance, and BPJ. These limitations are unchanged from the previous permit. For temperature, this Order includes a limit of 85°F, which was the maximum value observed from January 1999 through September 2002.
- c) Effluent Limitation B.2.b (pH): This effluent limit is unchanged from the previous permit. The limit is based on the Basin Plan (Chapter 4, Table 4-2), which is derived from federal requirements (40 CFR 133.102). Compliance has been demonstrated by existing plant performance.
- d) Effluent Limitation B.2.c (Whole Effluent Acute Toxicity): The Basin Plan specifies a narrative objective for toxicity, requiring that all waters shall be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental response on aquatic organisms.

Detrimental response includes but is not limited to decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alternations in population, community ecology, or receiving water biota. These effluent toxicity limits are necessary to ensure that this objective is protected. The whole effluent acute toxicity limits for a three-sample median and single sample maximum are consistent with the previous permit and are based on the Basin Plan (Table 4-4, pg. 4-70).

e) Effluent Limitation B.2.d (Total Dissolved Solids and Chlorides): These effluent limitations are unchanged from the previous permit. These limits are based on the Basin Plan (Chapter 3, Table 3-7).

f) Effluent Limitation B.2.e (Toxic Substances):

1. Reasonable Potential Analysis (RPA):

40 CFR 122.44(d)(1)(i) specifies that permits are required to include WQBELs for all pollutants "which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard". Thus, the fundamental step in determining whether or not a WQBEL is required is to assess a pollutant's reasonable potential of excursion of its applicable WQOs or WQC. The following section describes the RPA methodology and the results of such an analysis for the pollutants identified in the Basin Plan and the CTR.

i) *WQOs and WQC*: The RPA involves the comparison of effluent data with appropriate WQOs including narrative toxicity objectives in the Basin Plan, applicable WQC in the CTR/NTR, and U.S.EPA's 1986 Quality Criteria for Water. The Basin Plan objectives and CTR criteria are shown in Attachment 1 of this Fact Sheet.

ii) *Methodology*: The RPA is conducted using the method and procedures prescribed in Section 1.3 of the SIP. Board staff has analyzed the effluent and background data and the nature of facility operations to determine if the discharge has reasonable potential to cause or contribute to exceedances of applicable WQOs or WQC. Attachment 1 of this Fact Sheet shows the step-wise process described in Section 1.3 of the SIP.

iii) *Effluent and background data*: The RPA was based on effluent monitoring data for the period from January 1999 through September 2002. There are insufficient ambient background data available for Vallecitos Creek. By letter dated August 6, 2001 by Board staff, entitled Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy, the Board's Executive Officer required the Discharger conduct additional monitoring pursuant to section 13267 of the California Water Code. The will reevaluate RP, as appropriate, when these data become available.

iv) *RPA determination*: The RPA results are shown below in Table B and Attachment 1 of this Fact Sheet. The pollutants that exhibit RP are copper and zinc.

Table B. Summary of Reasonable Potential Results

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL ¹ (µg/L)	Governing WQO/WQC (ug/L)	Maximum Background (µg/L)	RPA Results ²
2	Arsenic	NA	190	NA	Ud
4	Cadmium	5	1.13	NA	N
5b	Chromium (VI)	5.35	11	NA	N

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL ¹ (µg/L)	Governing WQO/WQC (ug/L)	Maximum Background (µg/L)	RPA Results ²
6	Copper	93	11.82	NA	Y
7	Lead	1.8	3.18	NA	N
8	Mercury	0.002	0.025	NA	N
9	Nickel	NA	56	NA	Ud
10	Selenium	NA	5	NA	Ud
11	Silver	NA	4.06	NA	Ud
13	Zinc	80	58	NA	Y
14	Cyanide	NA	5.2	NA	Ud
16	2,3,7,8-TCDD (Dioxin)	NA	1.4E-08	NA	Ud
17	Acrolein	NA	780	NA	Ud
18	Acrylonitrile	NA	0.66	NA	Ud
19	Benzene	NA	71	NA	Ud
20	Bromoform	NA	360	NA	Ud
21	Carbon Tetrachloride	NA	4.4	NA	Ud
22	Chlorobenzene	NA	21000	NA	Ud
23	Chlorodibromomethane	NA	34	NA	Ud
24	Chloroethane	NA	NA	NA	Uo
25	2-Chloroethylvinyl Ether	NA	NA	NA	Uo
26	Chloroform	NA	NA	NA	Uo
27	Dichlorobromomethane	NA	46	NA	Ud
28	1,1-Dichloroethane	NA	NA	NA	Uo
29	1,2-Dichloroethane	NA	99	NA	Ud
30	1,1-Dichloroethylene	NA	3.2	NA	Ud
31	1,2-Dichloropropane	NA	39	NA	Ud
32	1,3-Dichloropropylene	NA	1700	NA	Ud
33	Ethylbenzene	NA	29000	NA	Ud
34	Methyl Bromide	NA	4000	NA	Ud
35	Methyl Chloride	NA	NA	NA	Uo
36	Methylene Chloride	NA	1600	NA	Ud
37	1,1,2,2-Tetrachloroethane	NA	11	NA	Ud
38	Tetrachloroethylene	NA	8.85	NA	Ud
39	Toluene	NA	200000	NA	Ud
40	1,2-Trans-Dichloroethylene	NA	140000	NA	Ud
41	1,1,1-Trichloroethane	NA	NA	NA	Uo
42	1,1,2-Trichloroethane	NA	42	NA	Ud
43	Trichloroethylene	NA	81	NA	Ud
44	Vinyl Chloride	NA	525	NA	Ud
45	Chlorophenol	NA	400	NA	Ud
46	2,4-Dichlorophenol	NA	790	NA	Ud
47	2,4-Dimethylphenol	NA	2300	NA	Ud
48	2-Methyl-4,6-Dinitrophenol	NA	765	NA	Ud
49	2,4-Dinitrophenol	NA	14000	NA	Ud
50	2-Nitrophenol	NA	NA	NA	Uo
51	4-Nitrophenol	NA	NA	NA	Uo
52	3-Methyl-4-Chlorophenol	NA	NA	NA	Uo
53	Pentachlorophenol	NA	7.9	NA	Ud
54	Phenol	NA	4600000	NA	Ud
55	2,4,6-Trichlorophenol	NA	6.5	NA	Ud
56	Acenaphthene	NA	2700	NA	Ud
57	Acenaphthylene	NA	NA	NA	Uo

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL ¹ (µg/L)	Governing WQO/WQC (ug/L)	Maximum Background (µg/L)	RPA Results ²
58	Anthracene	NA	110000	NA	Ud
59	Benzidine	NA	0.00054	NA	Ud
60	Benzo(a)Anthracene	NA	0.049	NA	Ud
61	Benzo(a)Pyrene	NA	0.049	NA	Ud
62	Benzo(b)Fluoranthene	NA	0.049	NA	Ud
63	Benzo(ghi)Perylene	NA	NA	NA	Uo
64	Benzo(k)Fluoranthene	NA	0.049	NA	Ud
65	Bis(2-Chloroethoxy)Methane	NA	NA	NA	Uo
66	Bis(2-Chloroethyl)Ether	NA	1.4	NA	Ud
67	Bis(2-Chloroisopropyl)Ether	NA	170000	NA	Ud
68	Bis(2-Ethylhexyl)Phthalate	NA	5.9	NA	Ud
69	4-Bromophenyl Phenyl Ether	NA	NA	NA	Uo
70	Butylbenzyl Phthalate	NA	5200	NA	Ud
71	2-Chloronaphthalene	NA	4300	NA	Ud
72	4-Chlorophenyl Phenyl Ether	NA	NA	NA	Uo
73	Chrysene	NA	0.049	NA	Ud
74	Dibenzo(a,h)Anthracene	NA	0.049	NA	Ud
75	1,2 Dichlorobenzene	NA	17000	NA	Ud
76	1,3 Dichlorobenzene	NA	2600	NA	Ud
77	1,4 Dichlorobenzene	NA	2600	NA	Ud
78	3,3-Dichlorobenzidine	NA	0.077	NA	Ud
79	Diethyl Phthalate	NA	120000	NA	Ud
80	Dimethyl Phthalate	NA	2900000	NA	Ud
81	Di-n-Butyl Phthalate	NA	12000	NA	Ud
82	2,4-Dinitrotoluene	NA	9.1	NA	Ud
83	2,6-Dinitrotoluene	NA	NA	NA	Uo
84	Di-n-Octyl Phthalate	NA	NA	NA	Uo
85	1,2-Diphenylhydrazine	NA	0.54	NA	Ud
86	Fluoranthene	NA	370	NA	Ud
87	Fluorene	NA	14000	NA	Ud
88	Hexachlorobenzene	NA	0.00077	NA	Ud
89	Hexachlorobutadiene	NA	50	NA	Ud
90	Hexachlorocyclopentadiene	NA	17000	NA	Ud
91	Hexachloroethane	NA	8.9	NA	Ud
92	Indeno(1,2,3-cd) Pyrene	NA	0.049	NA	Ud
93	Isophorone	NA	600	NA	Ud
94	Naphthalene	NA	NA	NA	Uo
95	Nitrobenzene	NA	1900	NA	Ud
96	N-Nitrosodimethylamine	NA	8.1	NA	Ud
97	N-Nitrosodi-n-Propylamine	NA	1.4	NA	Ud
98	N-Nitrosodiphenylamine	NA	16	NA	Ud
99	Phenanthrene	NA	NA	NA	Uo
100	Pyrene	NA	11000	NA	Ud
101	1,2,4-Trichlorobenzene	NA	NA	NA	Uo
102	Aldrin	NA	0.00014	NA	Ud
103	alpha-BHC	NA	0.013	NA	Ud
104	beta-BHC	NA	0.046	NA	Ud
105	gamma-BHC	NA	0.063	NA	Ud
106	delta-BHC	NA	NA	NA	Uo
107	Chlordane	NA	0.00059	NA	Ud

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL ¹ (µg/L)	Governing WQO/WQC (ug/L)	Maximum Background (µg/L)	RPA Results ²
108	4,4'-DDT	NA	0.00059	NA	Ud
109	4,4'-DDE	NA	0.00059	NA	Ud
110	4,4'-DDD	NA	0.00084	NA	Ud
111	Dieldrin	NA	0.00014	NA	Ud
112	alpha-Endosulfan	NA	0.0087	NA	Ud
113	beta-Endosulfan	NA	0.0087	NA	Ud
114	Endosulfan Sulfate	NA	240	NA	Ud
115	Endrin	NA	0.0023	NA	Ud
116	Endrin Aldehyde	NA	0.81	NA	Ud
117	Heptachlor	NA	0.00021	NA	Ud
118	Heptachlor Epoxide	NA	0.00011	NA	Ud
119-125	PCBs	NA	0.00017	NA	Ud
126	Toxaphene	NA	0.0002	NA	Ud
	Tributyltin	NA	0.01	NA	Ud

- 1) Maximum Effluent Concentration (MEC) in bold is the actual detected MEC, otherwise the MEC shown is the minimum detection level.
NA = Not Available (there is no effluent and/or ambient monitoring data for this constituent).
 - 2) RP = Yes, if (1) either MEC or Background > WQO/WQC.
RP = No, if (1) both MEC and background < WQO/WQC or (2) no background and all effluent data non-detect, or no background and MEC < WQO/WQC (per WQ 2001-16 Napa Sanitation Remand)
RP = Ud (undetermined due to lack of effluent monitoring data).
RP = Uo (undetermined if no objective promulgated).
- v) *Constituents with limited data:* Reasonable potential could not be determined for many of the toxic pollutants due to (i) the absence of effluent data, or (ii) the absence of applicable WQOs or WQCs. As required by the August 6, 2001 letter from Board staff to all permittees, the Discharger is required to initiate or continue to monitor for those pollutants in this category using analytical methods that provide the best detection limits reasonably feasible. These pollutants' RP will be reevaluated in the future to determine whether there is a need to add numeric effluent limits to the permit or to continue monitoring.
- vi) *Pollutants with no reasonable potential:* WQBELs are not included in the Order for constituents that do not have reasonable potential to cause or contribute to exceedance of applicable WQOs or WQC. However, monitoring for those pollutants is still required under the provisions of the August 6, 2001 letter. If concentrations of these constituents are found to have increased significantly, the Discharger will be required to investigate the source(s) of the increase(s). Remedial measures are required if the increases pose a threat to water quality in the receiving water.
- vii) *Permit reopener:* The permit includes a reopener provision to allow numeric effluent limits to be added for any constituent that in the future exhibits reasonable potential to cause or contribute to exceedance of a WQO or WQC. This determination, based on monitoring results, will be made by the Board.
2. Final Water Quality-Based Effluent Limits: The final WQBELs were developed for the toxic and priority pollutants that were determined to have reasonable potential to cause or contribute to exceedances of the WQOs or WQC. Final effluent limitations were calculated based on appropriate WQOs/WQC and the appropriate procedures specified in Section 1.4 of

the SIP (See Attachment 2 of this Fact Sheet). For the purpose of the Proposed Order, final WQBELs refer to all non-interim effluent limitations. The WQOs or WQC used for each pollutant with reasonable potential is indicated in Table C below as well as in Attachment 2.

Table C. Water Quality Objectives/Criteria for Pollutants with RP

Pollutant	Chronic WQO/WQC (µg/L)	Acute WQO/WQC (µg/L)	Basis of Lowest WQO/WQC Used in RP
Copper	11.82	17.73	Basin Plan
Zinc	58	117	Basin Plan

- g) Effluent Limitation B.3: These limits are based on the previous permit, the Basin Plan and BPJ. The requirements for pH and oil and grease are to ensure that the discharge does not degrade groundwater. The limitations for standing water and vegetation management are to ensure that nuisance conditions do not develop.
- h) Effluent Limitation B.4: The limit for total dissolved solids is based on the Basin Plan and necessary to ensure that the discharge does not degrade groundwater.

5. Basis for Receiving Water Limitations

- a) Receiving water limitations C.1, C.2, and C.3 (conditions to be avoided): These limits are based on the previous permit and the narrative/numerical objectives contained in Chapter 3 of the Basin Plan, page 3-2 – 3-5.
- b) Receiving water limitation C.4 (compliance with State Law): This requirement is in the previous permit, requires compliance with Federal and State law, and is self-explanatory.

6. Basis for Self-Monitoring Requirements

The SMP includes monitoring at the outfalls for conventional, non-conventional pollutants, and acute toxicity. Much of the monitoring has not changed from the previous Order. To ensure that the discharge of treated sanitary wastewater does not pose a threat to groundwater or create nuisance conditions, this permit includes monthly monitoring for TDS and dissolved oxygen, and quarterly monitoring for total Kjeldahl nitrogen and nitrate. Since the Discharger has not observed acute toxicity in industrial effluent, the monitoring frequency has been reduced from monthly to quarterly. To determine compliance with effluent limitations, this Order requires the Discharger to sample each "batch" of industrial wastewater for copper and zinc prior to initiating surface water discharges.

7. Basis for Provisions

- a) Provisions D.1. (Permit Compliance and Rescission of Previous Permit): Time of compliance is based on 40 CFR 122. The basis of this Order superceding and rescinding the previous permit Order is 40 CFR 122.46.
- b) Provision D.2 (Whole Effluent Acute Toxicity): This provision establishes conditions by which compliance with permit effluent limits for acute toxicity will be demonstrated. Conditions initially include the use of 96-hour static renewal bioassays, the use of fathead minnow, rainbow trout, or three-spine stickleback as the test species, and the use of approved test methods as specified. On July 1, 2004, the Discharger shall switch from the 3rd to 5th Edition U.S.EPA protocol, unless it demonstrates that such a switch is not feasible.

- c) Provision D.3 (TRE for Acute Toxicity): This provision, based on BPJ and the previous permit, requires the Discharger to conduct a toxicity evaluation reduction and toxicity identification evaluation if it violates effluent limits for acute toxicity.
- d) Provision D.4 (Operations and Maintenance Manual): This provision is based on the Basin Plan, requirements of 40 CFR 122 and the previous permit.
- e) Provision D.5 (Contingency Plan Update): The Contingency Plan provision is based on the requirements stipulated in Board Resolution No. 74-10 and the previous permit.
- f) Provision D.6 (Stormwater Pollution Prevention Plan and Annual Report): This provision is based on and consistent with Basin Plan objectives, and statewide storm water requirements for industrial facilities.
- g) Provision D.7 (Nutrient Management Plan): This provision, based on BPJ and Basin Plan objectives, requires the Discharger to demonstrate that it does not apply treated sanitary wastewater above agronomic rates.
- h) Provision D.8 (Disinfection Plan): This provision, based on BPJ and Basin Plan objectives, requires the Discharger to demonstrate how it will optimize the use of sodium hypochlorite for disinfecting sanitary wastewater.
- i) Provision D.9 (Self-Monitoring Program): The Discharger is required to conduct monitoring of the permitted discharges in order to evaluate compliance with permit conditions. Monitoring requirements are contained in the Self Monitoring Program (SMP) of the Permit. This provision requires compliance with the SMP, and is based on 40 CFR 122.44(i), 122.62, 122.63 and 124.5. The SMP is a standard requirement in almost all NPDES permits issued by the Board, including this Order. It contains definitions of terms, specifies general sampling and analytical protocols, and sets out requirements for reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations, the California Water Code, and Board's policies. The SMP also contains a sampling program specific for the facility. It defines the sampling stations and frequency, the pollutants to be monitored, and additional reporting requirements. Pollutants to be monitored include all parameters for which effluent limitations are specified. Monitoring for additional constituents, for which no effluent limitations are established, is also required to provide data for future completion of RPAs for them.
- j) Provision D.10 (Standard Provisions and Reporting Requirements): The purpose of this provision is to require compliance with the standard provisions and reporting requirements given in this Board's document titled *Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993* (the Standard Provisions), or any amendments thereafter. Where provisions or reporting requirements specified in the permit are different from equivalent or related provisions or reporting requirements given in the Standard Provisions, the permit specifications shall apply. The standard provisions and reporting requirements given in the above document are based on various state and federal regulations with specific references cited therein.
- k) Provision D.11 (Change in Control or Ownership): This provision is based on 40 CFR 122.61.
- l) Provision D.12 (Permit Reopener): This provision is based on 40 CFR 123.
- m) Provision D.13 (NPDES Permit /U.S.EPA concurrence): This provision is based on 40 CFR 123.

- n) Provision D.14 (Permit Expiration and Reapplication): This provision is based on 40 CFR 122.46(a).

V. WASTE DISCHARGE REQUIREMENT APPEALS

Any person may petition the State Water Resources Control Board to review the decision of the Board regarding the Waste Discharge Requirements. A petition must be made within 30 days of the Board public hearing.

VI. ATTACHMENTS

Attachment 1: RPA Results for Priority Pollutants

Attachment 2: Calculation of Final WQBELs

[illegible]

Attachment 1
Water Quality Objectives/Criteria Selection for
General Electric Company - Vallecitos Nuclear Center

# in CTR	PRIORITY POLLUTANTS	Basin Plan Objectives (ug/L) - Regional Board 2				CTR Water Quality Criteria (ug/L)				Factors for Metals				Conversion Factor (CF)			
		Freshwater (from Table 3-4)		Saltwater (Table 3-3)		Freshwater		Saltwater		Freshwater Criteria		Freshwater Criteria		freshwater		saltwater	
		4-day ug/L	1-hr ug/L	24-hr Max ug/L	4-day ug/L	1-hr ug/L	24-hr Max ug/L	4-day ug/L	1-hr ug/L	24-hr Max ug/L	CCC (acute) ug/L	CCC (chronic) ug/L	OMC (acute) ug/L	OMC (chronic) ug/L	freshwater acute criteria	freshwater chronic criteria	saltwater chronic criteria
52	3-Methyl-4-Chlorophenol	No Criteria									19	15					
53	Pentachlorophenol	8.20															
54	Phenol	480,000															
55	2,4,6-Trichlorophenol	6.50															
56	Acenaphthene	2,700															
57	Acenaphthylene	No Criteria															
58	Anthracene	110,000															
59	Benzidine	0.0054															
60	Benzo(a)Anthracene	0.049															
61	Benzo(a)Pyrene	0.049															
62	Benzo(b)Fluoranthene	0.049															
63	Benzo(g,h,i)Perylene	No Criteria															
64	Benzo(k)Fluoranthene	0.049															
65	Bis(2-Chloroethoxy)Methane	No Criteria															
66	Bis(2-Chloroethyl)Ether	1.40															
67	Bis(2-Chloroisopropyl)Ether	170,000															
68	Bis(2-Ethylhexyl)Phthalate	5.90															
69	4-Bromophenyl Phenyl Ether	No Criteria															
70	Butylbenzyl Phthalate	5,200															
71	2-Chloronaphthalene	4,300															
72	4-Chlorophenyl Phenyl Ether	No Criteria															
73	Chrysene	0.049															
74	Dibenz(a,h)Anthracene	0.049															
75	1,2-Dichlorobenzene	17,000															
76	1,3-Dichlorobenzene	2,800															
77	1,4-Dichlorobenzene	2,800															
78	3,3'-Dichlorobenzidine	0.077															
79	Diethyl Phthalate	120,000															
80	Dimethyl Phthalate	2,800,000															
81	Di-n-Butyl Phthalate	12,000															
82	2,4-Dinitrotoluene	9.10															
83	2,6-Dinitrotoluene	No Criteria															
84	Di-n-Octyl Phthalate	No Criteria															
85	1,2-Diphenylhydrazine	0.54															
86	Fluoranthene	370															
87	Fluorene	14,000															
88	Hexachlorobenzene	0.00077															
89	Hexachlorobutadiene	50															
90	Hexachlorocyclopentadiene	17,000															
91	Hexachloroethane	8.90															
92	Indeno(1,2,3-cd) Pyrene	0.049															
93	Isophorone	600															
94	Isophthalene	No Criteria															
95	Nitrobenzene	1,900															
96	N-Nitrosodimethylamine	8.10															
97	N-Nitrosod-n-Propylamine	1.40															
98	N-Nitrosodiphenylamine	16															
99	Phenanthrene	No Criteria															
100	Pyrene	11,000															
101	1,2,4-Trichlorobenzene	No Criteria															
102	Aldrin	0.00014									3						

Attachment 1
Water Quality Objectives/Criteria Selection for
General Electric Company - Vallecitos Nuclear Center

# in CTR	PRIORITY POLLUTANTS	Lowest (most stringent) Criteria ° ug/L	Basin Plan Objectives (ug/L)- Regional Board 2						CTR Water Quality Criteria (ug/L)						Factors for Metals Freshwater Criteria				Conversion Factor (CF)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
			Freshwater (from Table 3-4)			Saltwater (Table 3-3)			Freshwater		Saltwater		Human Health for consumption of:		ma	ba	mc	bc	freshwater acute criteria	freshwater chronic criteria	saltwater acute criteria	saltwater chronic criteria																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
			4-day ug/L	1-hr ug/L	24-hr Max ug/L	4-day ug/L	1-hr ug/L	24-hr Max ug/L	CMC (acute) ug/L	CCC (chronic) ug/L	CMC (acute) ug/L	CCC (chronic) ug/L	Water & Organisms only ug/L	Organisms only ug/L																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						

Notes:

- (1) Receiving body: minimum hardness = 100 mg/L as CaCO3
Reasonable Potential Analysis based on the fresh water CTR criteria except for arsenic, cadmium, chromium, lead, mercury, nickel, and zinc where the lowest Basin Plan water quality objectives are more stringent, therefore apply.

- (2) PCBs sum refers to sum of PCB 1016, 1221, 1232, 1242, 1248, 1254, and 1260

Beginning	Step 2	Step 3	Step 4	Step 5	Step 6	Steps 7 & 8	Final Result
Constituent name	C (ug/L) Lowest (most stringent) Criteria (Enter "No Criteria" for no criteria)	Are all data points detected (Y/N)?	Concentration from the effluent (MEC)	MEC vs. C	B (ug/L)	7) Review other information in the SIP page 4. If information is unavailable or insufficient, 8) the RWQCB shall establish interim monitoring requirements.	RPA Result
1 Antimony	4,300	N			No RMP Data	No ambient data, to Step 7	Ud
2 Arsenic ^a	190	N			No RMP Data	No ambient data, to Step 7	Ud
3 Barium	No Criteria	N		No Criteria	No RMP Data	No Criteria	Ud
4 Cadmium ^b	1.13	Y			No RMP Data	No ambient data, to Step 7	Ud
5a Chromium (III)	206.98	N			No RMP Data	No ambient data, to Step 7	Ud
5b Chromium (VI) ^b	11.00	Y	5.35	MEC-C, go to Step 5	No RMP Data	No ambient data, to Step 7	Ud
6 Copper (303d listed) ^c	11.82	Y	93	MEC-C, go to Step 5	No RMP Data	No ambient data, to Step 7	Yes
7 Lead ^a	3.18	Y	1.8	MEC-C, go to Step 5	No RMP Data	No ambient data, to Step 7	Ud
8 Mercury (303d listed) ^b	0.025	Y	0.002	MEC-C, go to Step 5	No RMP Data	No ambient data, to Step 7	Ud
9 Nickel ^b	56.00	N			No RMP Data	No ambient data, to Step 7	Ud
10 Selenium (303d listed) ^b	5.00	N			No RMP Data	No ambient data, to Step 7	Ud
11 Silver ^b	4.06	N			No RMP Data	No ambient data, to Step 7	Ud
12 Thallium	6.30	N			No RMP Data	No ambient data, to Step 7	Ud
13 Zinc ^b	58.00	Y	80		No RMP Data	No ambient data, to Step 7	Yes
14 Cyanide ^b	5.20	N		No Criteria	No RMP Data	No Criteria	Ud
15 Asbestos	No Criteria	N		No Criteria	No RMP Data	No Criteria	Ud
16 2,3,7,8-TCDD (303d listed)	0.000000014	N			No RMP Data	No ambient data, to Step 7	Ud
17 Acrolein	760	N			No RMP Data	No ambient data, to Step 7	Ud
18 Acrylonitrile	0.66	N			No RMP Data	No ambient data, to Step 7	Ud
19 Benzene	71	N			No RMP Data	No ambient data, to Step 7	Ud
20 Bromoform	360	N			No RMP Data	No ambient data, to Step 7	Ud
21 Carbon Tetrachloride	4.4	N			No RMP Data	No ambient data, to Step 7	Ud
22 Chlorobenzene	21,000	N			No RMP Data	No ambient data, to Step 7	Ud
23 Chlorodibromomethane	34	N			No RMP Data	No ambient data, to Step 7	Ud
24 Chloroethane	No Criteria	N		No Criteria	No RMP Data	No Criteria	Ud
25 2-Chloroethylvinyl ether	No Criteria	N		No Criteria	No RMP Data	No Criteria	Ud
26 Chloroform	No Criteria	N		No Criteria	No RMP Data	No Criteria	Ud
27 Dichlorobromomethane	46	N			No RMP Data	No ambient data, to Step 7	Ud
28 1,1-Dichloroethane	No Criteria	N		No Criteria	No RMP Data	No Criteria	Ud
29 1,2-Dichloroethane	99	N			No RMP Data	No ambient data, to Step 7	Ud
30 1,1-Dichloroethene	3.2	N			No RMP Data	No ambient data, to Step 7	Ud
31 1,2-Dichloropropane	39	N			No RMP Data	No ambient data, to Step 7	Ud
32 1,3-Dichloropropane	1,000	N			No RMP Data	No ambient data, to Step 7	Ud
33 Ethylbenzene	23,000	N			No RMP Data	No ambient data, to Step 7	Ud
34 Methyl Bromide	4,000	N			No RMP Data	No ambient data, to Step 7	Ud
35 Methyl Chloride	No Criteria	N		No Criteria	No RMP Data	No Criteria	Ud
36 1,1,2,2-Tetrachloroethane	1,600	N			No RMP Data	No ambient data, to Step 7	Ud
37 1,1,2,2-Tetrachloroethene	8.95	N			No RMP Data	No ambient data, to Step 7	Ud
38 Toluene	200,000	N			No RMP Data	No ambient data, to Step 7	Ud
39 1,2,3-Trichlorobenzene	140,000	N			No RMP Data	No ambient data, to Step 7	Ud
40 1,2-Trans-Dichloroethene	No Criteria	N		No Criteria	No RMP Data	No Criteria	Ud
41 1,1,1-Trichloroethane	42	N			No RMP Data	No ambient data, to Step 7	Ud
42 1,1,2-Trichloroethane	81	N			No RMP Data	No ambient data, to Step 7	Ud
43 Trichloroethylene	525	N			No RMP Data	No ambient data, to Step 7	Ud
44 Vinyl Chloride	400	N			No RMP Data	No ambient data, to Step 7	Ud
45 2-Chlorophenol	790	N			No RMP Data	No ambient data, to Step 7	Ud
46 2,4-Dichlorophenol	2,300	N			No RMP Data	No ambient data, to Step 7	Ud
47 2,4-Dimethylphenol	765	N			No RMP Data	No ambient data, to Step 7	Ud
48 2-Methyl-4,6-Dinitrophenol	14,000	N			No RMP Data	No ambient data, to Step 7	Ud
49 2,4-Dinitrophenol	No Criteria	N		No Criteria	No RMP Data	No Criteria	Ud
50 4-Nitrophenol	No Criteria	N		No Criteria	No RMP Data	No Criteria	Ud
51 4-Nitrophenol	No Criteria	N		No Criteria	No RMP Data	No Criteria	Ud

Beginning	Step 2	Step 3	Step 4	Step 5	Step 6	Steps 7 & 8	Final Result				
	C (ug/L) Lowest (most stringent) Criteria (Enter "No Criteria" for no criteria)	Effluent Data Available (Y/N)?	Are all data points non-detects (Y/N)?	If all data points are ND and MDL > C, interim monitoring is required	Enter the pollutant detected max conc (ug/L)	Concentration from the effluent (MEC) (MEC= deleted max value; if all ND & MDL < C then MEC = MDL)	MEC vs. C	B (ug/L) Enter the Maximum Background Conc If B < C, effluent limitation is required	7) Review other information in the SIP page 4. If information is unavailable or insufficient: 8) the RWQCB shall establish interim monitoring requirements.	RPA Result	Reason
52	3-Methyl 4-Chlorophenol	N			No Criteria	No Criteria	No Criteria	No RMP Data	No Criteria	Ud	No Criteria
53	Pentachlorophenol	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
54	Phenol	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
55	2,4,6-Trichlorophenol	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
56	Acenaphthene	N			No effluent data	No Criteria		No RMP Data	No Criteria	Ud	No effluent data & no B
57	Acenaphthylene	N			No effluent data	No Criteria		No RMP Data	No Criteria	Ud	No Criteria
58	Anthracene	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
59	Benzofluoranthene	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
60	Benzofluoranthene	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
61	Benzofluoranthene	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
62	Benzofluoranthene	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
63	Benzofluoranthene	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
64	Bis(2-Chloroethoxy)Methane	N			No Criteria	No Criteria		No RMP Data	No Criteria	Ud	No Criteria
65	Bis(2-Chloroethoxy)Methane	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
66	Bis(2-Chloroethoxy)Methane	N			No Criteria	No Criteria		No RMP Data	No Criteria	Ud	No Criteria
67	Bis(2-Chloroethoxy)Methane	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
68	Bis(2-Ethylhexyl)Phthalate	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
69	4-Bromophenyl Phenyl Ether	N			No Criteria	No Criteria		No RMP Data	No Criteria	Ud	No Criteria
70	Butylbenzyl Phthalate	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
71	2-Chloronaphthalene	N			No Criteria	No Criteria		No RMP Data	No Criteria	Ud	No Criteria
72	4-Chlorophenyl Phenyl Ether	N			No Criteria	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
73	Chrysene	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No Criteria
74	Dibenzofluoranthene	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
75	1,2-Dichlorobenzene	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
76	1,3-Dichlorobenzene	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
77	1,4-Dichlorobenzene	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
78	3,3-Dichlorobenzidine	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
79	Diethyl Phthalate	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
80	Dimethyl Phthalate	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
81	D-n-Butyl Phthalate	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
82	2,4-Dinitrochlorobenzene	N			No Criteria	No Criteria		No RMP Data	No Criteria	Ud	No Criteria
83	2,6-Dinitrochlorobenzene	N			No Criteria	No Criteria		No RMP Data	No Criteria	Ud	No Criteria
84	D-n-Octyl Phthalate	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
85	2,2-Diethylphenylhydrazine	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
86	Fluoranthene	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
87	Fluoranthene	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
88	Hexachlorobenzene	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
89	Hexachlorobenzene	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
90	Hexachlorobenzene	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
91	Hexachlorobenzene	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
92	Indeno(1,2,3-cd)Pyrene	N			No Criteria	No Criteria		No RMP Data	No Criteria	Ud	No Criteria
93	Isophorone	N			No Criteria	No Criteria		No RMP Data	No Criteria	Ud	No Criteria
94	Naphthalene	N			No Criteria	No Criteria		No RMP Data	No Criteria	Ud	No Criteria
95	Nitrobenzene	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
96	N-Nitrosodimethylamine	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
97	N-Nitrosodimethylamine	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
98	N-Nitrosodiphenylamine	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
99	Phenanthrene	N			No Criteria	No Criteria		No RMP Data	No Criteria	Ud	No Criteria
100	Pyrene	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B
101	1,2,4-Trichlorobenzene	N			No Criteria	No Criteria		No RMP Data	No Criteria	Ud	No Criteria
102	Adrin	N			No effluent data	No Criteria		No RMP Data	No ambient data, to Step 7	Ud	No effluent data & no B

Beginning	Step 2	Step 3	Step 4	Step 5	Step 6	Steps 7 & 8	Final Result			
	Effluent Data Available (Y/N)?	Are all data points non-detects (Y/N)?	If all data points are ND and MinDL > C, interim monitoring is required	Concentration from the effluent (MEC)	MEC vs. C	B (ug/L)	B vs. C	7) Review other information in the SIP page 4. If information is unavailable or insufficient, 8) the RWQCB shall establish interim monitoring requirements.	RPA Result	Reason
Constituent name			Enter the pollutant data (ug/L)	(MEC= deleted max value; if all ND & MinDL < C then MEC = MDL)		Enter the Maximum Background Conc				
103 alpha-BHC	N	N	No effluent data			No RMP Data	No ambient data to Step 7		Ud	No effluent data & no B
104 beta-BHC	N	N	No effluent data			No RMP Data	No ambient data to Step 7		Ud	No effluent data & no B
105 gamma-BHC	N	N	No effluent data			No RMP Data	No ambient data to Step 7		Ud	No effluent data & no B
106 delta-BHC	N	N	No Criteria	No Criteria	No Criteria	No RMP Data	No Criteria	No Criteria	Ud	No Criteria
107 Chlordane (303d listed)	N	N	No effluent data			No RMP Data	No ambient data to Step 7		Ud	No effluent data & no B
108 4,4'-DDT (303d listed)	N	N	No effluent data			No RMP Data	No ambient data to Step 7		Ud	No effluent data & no B
109 4,4'-DDE (linked to DDT)	N	N	No effluent data			No RMP Data	No ambient data to Step 7		Ud	No effluent data & no B
110 4,4'-DDD	N	N	No effluent data			No RMP Data	No ambient data to Step 7		Ud	No effluent data & no B
111 Dieldrin (303d listed)	N	N	No effluent data			No RMP Data	No ambient data to Step 7		Ud	No effluent data & no B
112 alpha-Endosulfan	N	N	No effluent data			No RMP Data	No ambient data to Step 7		Ud	No effluent data & no B
113 beta-Endosulfan	N	N	No effluent data			No RMP Data	No ambient data to Step 7		Ud	No effluent data & no B
114 Endosulfan Sulfate	N	N	No effluent data			No RMP Data	No ambient data to Step 7		Ud	No effluent data & no B
115 Endrin	N	N	No effluent data			No RMP Data	No ambient data to Step 7		Ud	No effluent data & no B
116 Endrin Alderhyde	N	N	No effluent data			No RMP Data	No ambient data to Step 7		Ud	No effluent data & no B
117 Heptachlor	N	N	No effluent data			No RMP Data	No ambient data to Step 7		Ud	No effluent data & no B
118 Heptachlor Epoxide	N	N	No effluent data			No RMP Data	No ambient data to Step 7		Ud	No effluent data & no B
119-125 PCBs sum (B)	N	N	No effluent data			No RMP Data	No ambient data to Step 7		Ud	No effluent data & no B
126 Toxaphene	N	N	No effluent data			No RMP Data	No ambient data to Step 7		Ud	No effluent data & no B
Tributyltin	N	N	No effluent data			No RMP Data	No ambient data to Step 7		Ud	No effluent data & no B

Notes:

(1) Reasonable Potential Analysis based on fresh water CTR criteria except for arsenic, cadmium, chromium, lead, mercury, nickel, silver and zinc (where the Basin Plan water quality objectives apply).

(2) PCBs sum refers to sum of PCB 1016, 1221, 1232, 1242, 1248, 1254, and 1260

(3) Receiving body minimum hardness = 100 mg/L as CaCO3, default pH = 7.8

(4) Bold are 303(d) listed pollutants

(5) RP=Yes, if either MEC or Background > WQOWQC
RP=Up (undetermined if no objective promulgated)
RP=No (undetermined due to lack of background data)
RP=CD (cannot determine due to limited data).

PRIORITY POLLUTANTS	Copper	Zinc
Basis and Criteria type	BP FW (4-d, 1- hr avg)	BP FW (4-d, 1- hr avg)
Lowest WQO	11.82	58
Translators		
Dilution Factor (D) (if applicable)	0	0
no. of samples per month	4	4
Aquatic life criteria required? (Y/N)	Y	Y
HH criteria analysis required? (Y/N)	N	N
Applicable Acute WQO	17.73	117
Applicable Chronic WQO	11.82	58
HH criteria		
Background (max conc)		
Background (avg conc for HH calc)		
Is the pollutant Bioaccumulative (Y/N)? (e.g., Hg)	N	N
ECA acute	17.73	117.0
ECA chronic	11.82	58
ECA HH		
No. of data points <10 or atleast 80% of data reported non detect? (Y/N)	N	N
avg of data points	10.096	19.198
SD	17.064	15.544
CV calculated	1.57	0.81
CV (Selected) - Final	1.57	0.81
ECA acute mult99	0.14	0.25
ECA chronic mult99	0.25	0.44
LTA acute	2.47	28.87
LTA chronic	3.00	25.28
minimum of LTAs	2.47	25.28
AMEL mult95	2.46	1.76
AMEL mult99	7.18	4.05
AMEL (aq life)	6.07	44.48
AMEL(aq life)	17.73	102.48
AMEL/AMEL Multiplier	2.92	2.30
AMEL (human hith)		
AMEL (human hith)		
minimum of AMEL for Aq. life vs HH	6.07	44.48
minimum of AMEL for Aq. Life vs HH	17.73	102.48
Current limit in permit (30-d avg)	N/A	N/A
Current limits in permit (daily)	11.8	106
Final limit - AMEL	6.07	44.48
Final limit - AMEL	17.73	102.48
Max Effl Conc (MEC)	93	80.0
Interim Limits for those where TMDL is final limit		